

NEW YORK—CLEVELAND—LONDON

Marine Review

THE BUSINESS OF TRANSPORTATION BY WATER

Vol. 52

JUNE, 1922

No. 6

Published by The Penton Publishing Co., Cleveland, Ohio, U. S. A.

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FOREIGN OFFICES

PARIS, FRANCE	224 Rue de Rivoli	LONDON, ENG.,	2-3 Caxton House, Westminster, S. W. 1.
		BIRMINGHAM, ENG.	Prince's Chambers

Cable Address IROTRAPEN, London

Subscription, United States and its possessions, \$3 per year; Canada and other Foreign Countries, \$4 per year. Single copies 25 cents. Back numbers over three months 50 cents. The Cleveland News Co. will supply the trade with MARINE REVIEW through the regular channels of the American News Co. European Agent, The International News Co., Brems building, Chancery Lane, London, E. C., England.

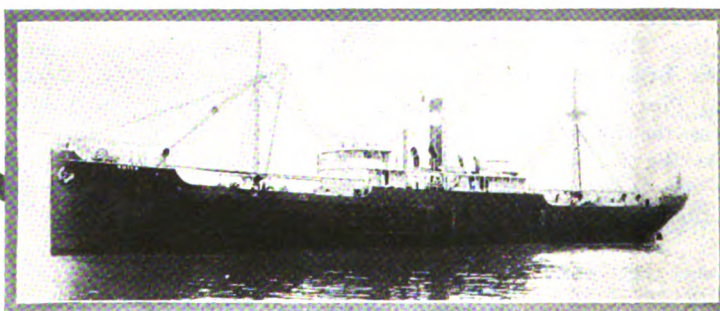
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Bethlehem-Built

Ships for the Bull Steamship Company



Left to right, top row:
S. S. Millingsockett, S. S.
Cornelia; middle row: S. S.
Margaret, S. S. Helen;
bottom: S. S. Edith.



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Marine Review

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CLEVELAND

LONDON

VOL. 52

JUNE, 1922

No. 6

Deliver Big U.S. Built Motorship

Harriman Yards Complete Diesel Freighter for European Run
of American-Hawaiian Line—Sister Ship Nearly Ready

THE first twin screw motorship originally designed and constructed on the Delaware river was delivered May 3 from the yard of the William Cramp & Sons Ship & Engine Building Co., Philadelphia, where she was engined. She was launched in November at the yard of the Merchant Shipbuilding Corp., Chester, Pa. She is the CALIFORNIAN. The construction of this vessel marked the advent of the Merchant company into the field of large full-powered diesel engined freighters. Following the CALIFORNIAN is her sister ship the MISSOURIAN, also built by the Merchant company and launched in December. The only American built ship comparable with the CALIFORNIAN and MISSOURIAN is the WILLIAM PENN, whose engines were built in Denmark, and installed in a hull originally intended for geared turbines, but the CALIFORNIAN is an all American product throughout. The principal dimensions of the CALIFORNIAN are as follows: Length overall, 461 feet; length between perpendiculars, 445 feet; beam, molded, 59 feet 8 inches; depth,

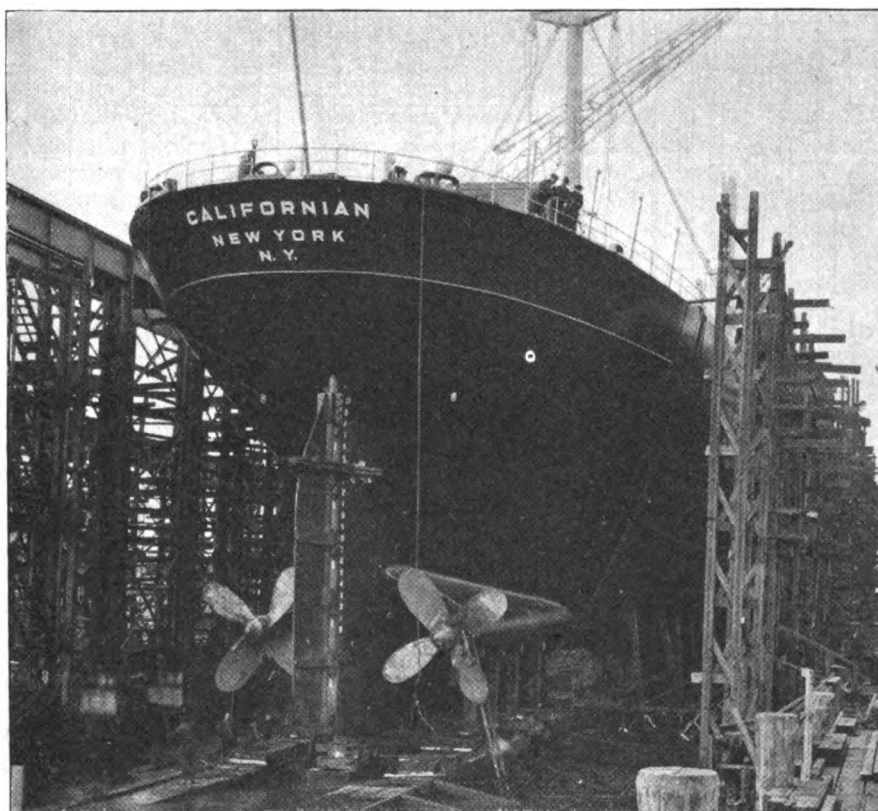
molded to shelter deck, 39 feet; contract draft, 28 feet 6 inches; displacement at contract draft, 16,500 tons; deadweight at contract draft, 11,000 tons; cargo capacity, including deep tank, bales, 560,000 cubic feet; contract speed, 11.5 knots; normal fuel capacity, 1400 tons; reserve fuel capacity in deep tank 760 tons; and normal radius, 25,000 miles.

In order to conserve length, the quarter amidships in these vessels are two decks high and relatively short, giving

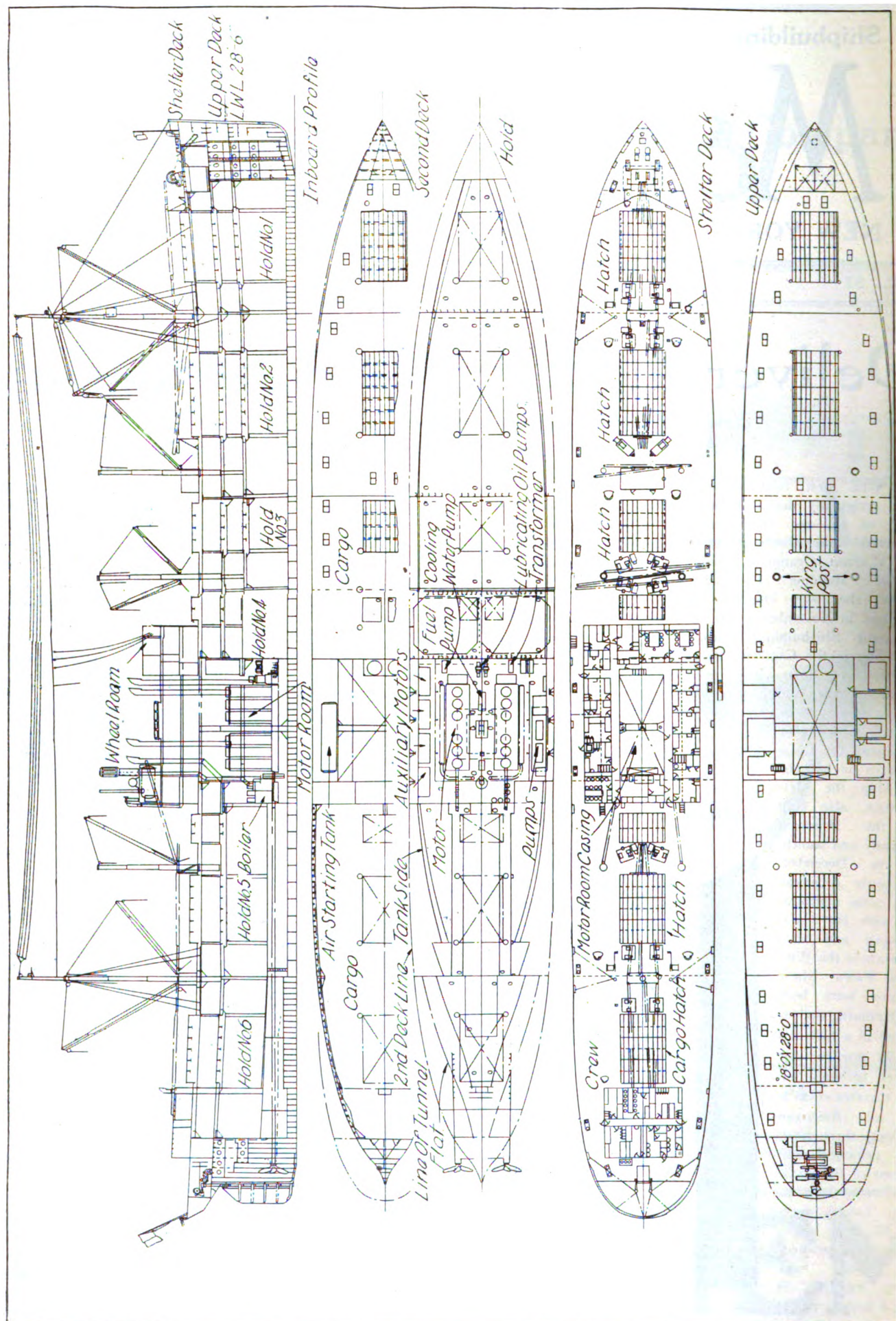
a maximum length for hatches and cargo handling gear. They are rigged with two masts and six king posts, carrying 21 booms, one of 30-ton capacity, one of 10-ton, eleven of 5-ton and eight of 3-ton. These serve seven hatches, all 18 feet wide and of varying lengths, the longest being 35 feet.

The masts, posts and booms are steel, the masts being steel up to the trucks, eliminating the usual wooden plug top masts.

The cargo handling machinery has been carefully selected, and consists of 14 double geared winches, and two Shepard Electric Crane & Hoist Co.'s winches. The 14 winches for the CALIFORNIAN were manufactured by the American Engineering Co. and the winches for the MISSOURIAN were made by the Maine Electric Co. Each winch is driven by a 30-horsepower motor. The motors and the controllers for the CALIFORNIAN were supplied by the Westinghouse Electric & Mfg. Co. Those for the MISSOURIAN were built by the General Electric Co. The propelling machinery consists of two Burmeister &



MOTORSHIP CALIFORNIAN READY FOR LAUNCHING



PLANS OF FULL POWERED, DIESEL ENGINE FREIGHTER BUILT IN AMERICAN YARD

Wain 6-cylinder, single acting, 4-cycle diesel engines of the cross-head type. Each engine is rated at 2250 diesel indicated horsepower and 115 revolutions per minute. Cylinders are 740 millimeters diameter by 1150 millimeters stroke. Thrust bearings are of the horseshoe type, and the 14-foot diameter propellers are manganese bronze.

Electricity for engine room auxiliaries, deck machinery, etc., is generated by four 65-kilowatt, direct current, 230-volt generators each direct connected to a 2-cylinder, 4-cycle diesel engine. At sea, only one set will be required, and in port a maximum of three, so that there always will be a stand-by set.

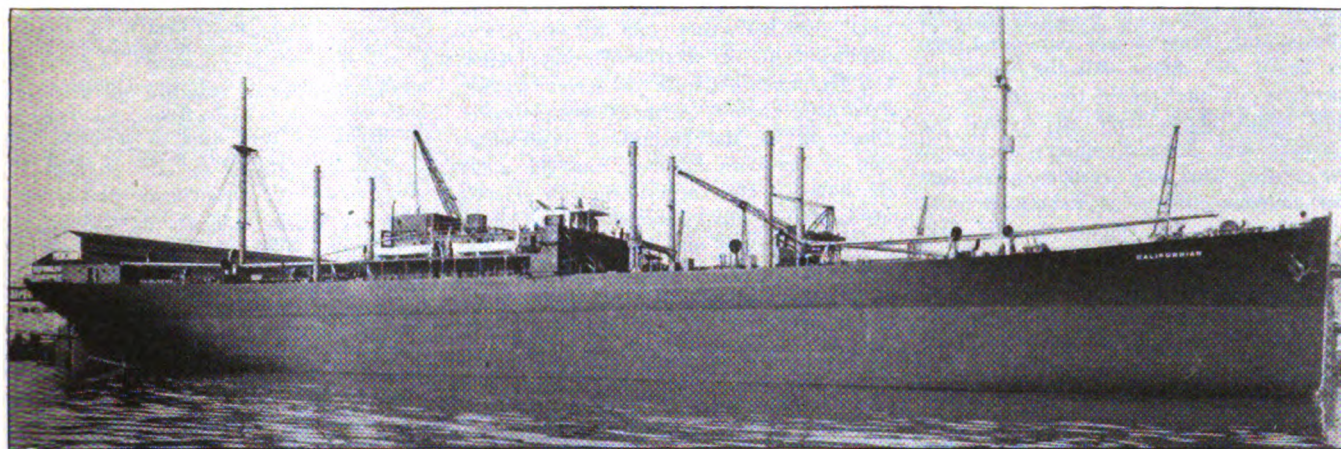
Both main and auxiliary diesel engine sets were constructed in the big shops of the William Cramp & Sons Ship &

Pioneers In Oxyacetylene United by Merger

Recent announcement made by the Air Reduction Sales Co. that it has acquired all the assets, including the patents, trade marks and trade names of the Davis-Bournonville Co. of Jersey City, N. J., marks an important event in the development of the oxyacetylene welding and cutting industry. The history of these two companies to a large extent has embraced the development of this industry.

The Air Reduction Sales Co. is a pioneer in the extraction of gases from the air for industrial use. Its principal product is oxygen, which is used to the greatest extent, in conjunction with acetylene, in producing the high-

am. Three years before, Mr. Bournonville had received the first oxyacetylene torch to be introduced in the United States. This torch was sent him by his associate, Edmond Fouche, of Paris, who, with Picard, had developed this revolutionary tool. The first Fouche torches, or blowpipes, as they were called, used the gases under high pressure, but Fouche later produced a low-pressure, or injector, type, employing the oxygen under high pressure and the acetylene under low pressure. Subsequently, Gauthier and Ely, of Paris, brought out the positive-pressure, or medium-pressure, blowpipe, in which both gases were used under moderate and independent pressures, affording positive control and maintenance of proper gas proportions.



THE TWIN SCREW MOTORSHIP CALIFORNIAN BEING OUTFITTED PRIOR TO DELIVERY TO HER OWNER, THE AMERICAN-HAWAIIAN STEAMSHIP CO.

Engine Building Co., in Philadelphia.

All deck machinery, including windlass and steering gear and all engine room auxiliaries except one small auxiliary steam driven air compressor for charging air bottles, are electrically operated. The steering gear is electric hydraulic drive.

There is one 120-horsepower electrical driven 2-stage auxiliary air compressor. A donkey boiler 48 x 108 inches is installed to generate steam for heating purposes and for fire extinguisher service. The Rich fire detecting and extinguishing system is also fitted, in conjunction with steam and carbon dioxide, carried in flasks located on deck.

Announcement is made of the purchase by the Admiral line of the four diesel auxiliary schooners, DAWNITE, DAYLITE, MOONLITE and SUNLITE, from J. M. Botts, 11 Moore street, New York, who had bought them from the Standard Oil Co. of New Jersey. They were built in 1916 by the Toledo Shipbuilding Co. The vessels will go into the coastwise and South American service.

temperature oxyacetylene flame. The company owns and operates 19 oxygen plants in important industrial centers of the country. Annually these plants turn out hundreds of millions of cubic feet of oxygen, this gas being compressed in steel tanks and distributed through the medium of an extensive plant and warehouse service system to the country's railroads, shipyards, steel mills, manufactories, garages, scrap yards, repair shops, etc.

Acetylene is second to oxygen in importance in the list of the company's products. The Air Reduction company owns and operates 10 plants devoted to the manufacture of this gas.

In addition to these oxygen and acetylene producing facilities, the Air Reduction company owns a carbide plant, a welding and cutting equipment manufacturing plant, and extensive laboratories for the carrying on of research in connection with its various activities.

The Davis-Bournonville Co. was organized in 1907 by Augustine Davis, Eugene Bournonville and C. B. Worth-

Messrs. Davis and Bournonville obtained in 1907 rights for this torch in the United States and Canada. The organization of the company followed.

As greater success was attained in connection with the welding torch, the company's activities were directed to the development of oxyacetylene cutting torches, acetylene generators, and finally to a line of specially designed machines for welding and cutting as the use of oxyacetylene flame became general.

It is the intention of the Air Reduction company to continue the manufacture of Davis-Bournonville torches, acetylene generators, special machines, etc., with the same organization which has helped develop this line of equipment to its present extent. The full line of equipment will be marketed through the combined service organizations of the two companies.

The Marine Construction Co., Seattle, recently completed a 110-foot scow for the Fidalgo Lumber Co., of Anacortes, Wash.

Pacific Coast Shipping Firms Raise Wages

Approximately 40 Pacific coast shipping firms operating coastwise vessels engaged in the lumber and general freight carrying trade have voluntarily increased the wages of all workers on such ships \$5 a month, and also have inaugurated a system of bonuses ranging from 5 to 10 per cent a month. The announcement of this action was made through the offices of the Ship Owners' Association of the Pacific Coast, San Francisco, and simultaneously at the headquarters of the Waterfront Employees' union on the Embarcadero.

The increases and bonus which affect all employees on all vessels in these services, was taken by unanimous vote of the ship owners, and benefit approximately 2000 men. The bonus system also affects both licensed and unlicensed men on board the ships. All the unlicensed members of the crews received 10 per cent bonus above their pay, while the captains and licensed officers receive 5 per cent. The only restriction is that any employee, licensed or unlicensed, must have been in the employ of the firm he is now with for six months or longer.

The wage and bonus increase follows closely on the recent action of the Standard Oil Co. and the Matson Navigation Co., both of which increased the pay of all members of their crews, and also inaugurated bonus systems on all their vessels. The Standard at present is paying a minimum of \$55 a month and board to crew members, with a 10 per cent bonus for service of six months or longer. These are said to be the highest ship crew wages paid anywhere in the world.

Coincident with the wage increase for coastwise vessel workers all the larger shipping interests on the Pacific coast put into effect new and increased wage scales for stevedores on the San Francisco wharves. The new wage arrangement provides for 80 cents an hour, and \$1.20 for overtime.

Germans Plan Services to Pacific Coast Ports

Two German steamship lines may be operating between ports of the Pacific coast and German ports within the next few months, according to advices which have reached shipping companies in San Francisco. The Pacific coast ports of call are to be Seattle, San Francisco and San Pedro, and the European terminals will be Bremen and Hamburg. The Cosmos line, which operated to the Pacific coast ports prior to the war, will be the first of these to get into active operation over its old trade routes, and will also extend its new operations to

the Hawaiian islands. The other line is one backed by Hugo Stinnes.

Arrangements have been completed for the establishment of offices of both these lines in Pacific coast ports and in Honolulu. The vessels to be operated are steamships, since the allies have refused permission to Germany to construct motorships. These vessels for this service are now nearing completion at Hamburg for the Stinnes interests. They are 12,000-ton freighters with speeds of 14 knots and they are to be ready for service shortly.

New Ocean Liner Arrives

Several thousand visitors inspected the new American liner *RESOLUTE* at New York following her arrival from Europe late in April after her first transatlantic trip under the American flag. The big liner with her sister ship *RELIANCE* was purchased by the Harriman organization for the north Atlantic passenger service. Chairman Lasker of the shipping board, appearing as the authorized representative of President Harding, was the guest of honor. He carried the President's message that "the passage of such ships as the *RESOLUTE* and *RELIANCE* into the hands of American citizens giving privately owned as against government owned vessels, marks an era in American merchant marine history."

News for the Operator

The *LAKE FAIRLIE* and the *LAKE GERA* have been obtained from the shipping board by the Lone Star Steamship service for a regular service between New Orleans and Porto Rico.

The shipping board has allocated the steamer *LONE STAR STATE* to the San Francisco-Oriental run of the Pacific Mail Steamship Co., to be delivered about July 1. The board also has allocated another 535-foot steamer to the company for this run, but the name has not been announced, though the vessel is believed to be the *PENINSULAR STATE*. The addition of these steamers will provide a 12-day service to the Orient.

C. H. Sprague & Son, Boston, announce the opening of a service from Montreal to Copenhagen and Christiania, with the sailing of the *ST. ANTHONY*. Quackenbush & Hancock, Montreal, will act as agents at that port.

Arrangements have been completed by the Dollar Steamship Co. whereby the North Atlantic & Western Steamship Co. becomes its agents at the port of Boston. A monthly service will be established between Boston and Far Eastern ports. The steamer *ETHEL DOLLAR* will inaugurate the service.

Acting as agents at the port of Boston for the Stray Line, Crowell & Thurlow announce a service from Boston to Brazil and River Plate ports.

The Cunard line from Boston to Queenstown and Liverpool was recently re-established with the sailing of the steamer *SAMARIA*. Boston was the original port of the company in this country, having established its service in 1840, with the *BRITANNIA*, 207 feet long and 1200 gross tons.

The Atlantic Transport Co. announces that the scheduled service between Baltimore and Liverpool.

London and Dutch and German ports is being revised due to increasingly heavy trade conditions. The steamers *MICHIGAN*, *DAKARIAN*, *MAKINAW* and *CYTHIAN* will be operated on the service with greater frequency of sailings.

The steamer *EASTERN GLADE*, 8520 tons deadweight, has been allocated by the shipping board on bareboat charter to the Mallory Transport lines of Baltimore. She will serve the south and east coast of Africa trade.

One of the latest additions to Baltimore's steamship services is the new line of the China-American Steamship Co. to Chinese and Japanese ports. The first vessel of this line, the steamer *MONMOUTH*, sailed early in May with structural steel and machinery.

The freighter *WEST IVAN* has been turned over to Scruthers & Barry for their transpacific service by the shipping board. The steamer has been in the service of the Admiral line, out of Seattle to the Orient.

The Isthmian line has chartered three steamers for the intercoastal trade. They are the *SANTA BARBARA* and *SANTA ROSA*, from W. R. Grace & Co., and the *ORINOCO*, from the Orinoco line.

When alterations are completed, the *WOLVERINE STATE* will be put in service between San Francisco and Manila and Hong Kong via Honolulu, with her sister ship, the *CREOLE STATE*, of the Pacific Mail fleet.

The Los Angeles Steamship Co. will put its newly acquired ships, *AEOLUS* and *HEROX*, now running for the Munson line from the Atlantic coast to South American ports, into service between San Pedro, Cal., and Honolulu. The *HEROX* will clear from San Pedro on July 10, and the *AEOLUS* will leave 10 days later. A 14-day schedule will be maintained.

The Mexican States line has made Oakland, Cal., a regular port of call, and through this new service the mainland port of San Francisco bay is given direct steamship connection with 11 ports on the west coast of Mexico and Central America. Service was inaugurated at the end of April, with the clearing of the steamer *CHIAPAS*.

The American liner *ST. PAUL* sailed from New York on May 3 on her first transatlantic voyage in a year and one-half. The famous ship had been completely rebuilt after her war service but was idle during the recent slump. She has been recommissioned by the American line for service to Plymouth, Cherbourg and Hamburg. Capt. H. R. Lewis, formerly of the *MONGOLIA*, is in command. The liner carried 550 passengers, 400 of them in cabin.

Lines at New York operating in the Far Eastern trade held several conferences early in May. This trade has been open for some time and one plan was to post a \$10,000 forfeit guaranteeing against price cutting. The suggestion was not adopted. Some rates were cut, the tariff on caustic soda dropping from \$15 to \$12; alum from \$18 to \$15, and rubber tires from \$18 to \$16.

The American-Hawaiian Steamship Co. announces the withdrawal of three of the smaller steamers of its intercoastal fleet. The vessels are the *AMERICAN*, *NEVADAN* and *NEBRASKAN*. The final sailing will be the *AMERICAN* from New York on June 8 in intercoastal service. The company will sell the steamers if opportunity arises. The motorship *CALIFORNIAN* will make one trip in this service before being placed in the Euro-Pan-Pacific coast trade.

The General Steamship Corp., Pacific coast agent for the French line, announces inauguration of direct freight service between Spanish ports and San Francisco and San Pedro. First steamer of

the service was the *St. Louis*, which called at Bilbao late in April.

The steamer *BEARPORT* is to be allocated to Struthers & Barry for their Oriental trade out of San Francisco, being diverted from the Portland-Orient service of the Columbia Pacific Shipping Co.

Direct steamship service for both passengers and freight is to be maintained between San Francisco and Eusemada, lower California, by the Mexican States line which has opened this service with the steamer *COLIMA*.

Norton, Lilly & Co., San Francisco agents for the Isthmian line, announce inauguration of a direct steamship service between San Francisco and Havana via San Pedro. The steamer *SANTA EULALIA* commenced the service.

Through rearrangement of schedules the time of water shipments between Philadelphia and Oakland, Cal., has been reduced by six days by the American-Hawaiian line.

The Pacific Mail Steamship Co. has been allocated its "502s" for the Manila direct service, receiving the *CREOLE STATE* and the *WOLVERINE STATE* for this purpose. For some time they have been on the direct run between San Francisco and Calcutta.

The General Steamship Corp. announces a monthly service will be established between the Pacific coast and Australia, with the Swedish steamers of the Trans-Atlantic Steamship Co. The steamer *Syne* will inaugurate the service in June, and an effort will be made to develop the copra trade from the South Sea islands on steamers instead of sailing vessels.

The Red Stack Co.'s tugs, *SEA KING* and *INTREPID* have been chartered to Gilkey Bros., of Anacortes, Wash., for a year, with option to purchase. They are being used in log-towing on Puget sound.

The shipping board has assigned the freighter *WEST JAPPA* to Swayne & Hoyt, as an addition to their Pacific-Argentina-Brazil service, to maintain a monthly service out of San Francisco to ports on the east coast of South America. *WEST JAPPA* has been under the operation of the Admiral line in transpacific trade. Swayne & Hoyt are returning the steamer *ROTARIAN* to the shipping board at Buenos Aires, and replacing her with the *WEST GAMBO*.

The shipping board steamers *HAWKEYE STATE* and *BUCKEYE STATE*, formerly operated by the Matson line, have been assigned to the United States line for the New York, Hamburg and Bremen service.

The General Steamship Corp. asked the shipping board to be relieved of the steamer *HOLLYWOOD*, which arrived in San Francisco this spring with 6000 tons of coal from Newcastle, and the vessel has been turned over to Swayne & Hoyt for operation in the San Francisco-Australia service.

Assigned Shipping Board Vessels

EASTERN GLADE, 8520 tons, assigned Mallory Transport Lines, Inc., Baltimore, managing agent. New York-South and East Coast Africa service.

VICTORIOUS, 11,868 tons, assigned Tampa Inter-Ocean Steamship Co., Tampa, Fla., managing agent. Gulf-Far East service.

WEST IVAN, 8565 tons, assigned Struthers & Barry, San Francisco, managing agent. San Francisco-Orient service.

WEST CHATALA, 8438 tons, assigned Tampa Inter-Ocean Steamship Co., Tampa, Fla., managing agent. Tampa-Spanish Mediterranean service.

EFFNA, 9896 tons, assigned to S. Sgitovich & Co., Galveston, Tex., managing agent. Galveston-London service.

Makes Speedy Passage

The French liner *PARIS* made a speedy transatlantic passage early in May. She reached Plymouth, England, from New York, in 5 days 23 hours despite the fact that she took the longer southerly route to avoid icebergs. She averaged more than 21 knots for the entire run. French line steamers are now stopping at an English port for the first time in 60 years, competing with English liners which have been making French ports on their transatlantic runs.

Largest Motorship Here

The motorship *LOCH KATRINE*, largest vessel of her type in the world, recently reached San Francisco from Hamburg on her maiden voyage. She is the latest addition to the fleet of refrigerated motor ships to be operated jointly by the Royal Mail Packet Co. and the Holland-American line between European and Pacific coast ports. The *LOCH KATRINE* is of 9500 gross and 5812 net tons. She has a speed of 13½ knots, driven by an 8-cylinder diesel engine, of 6000 indicated horsepower. She is 503 feet long, 62 feet beam, and 29.6 feet deep, loaded draft, and has three decks. She carries 11,934 tons of cargo and 1200 tons of oil, burning 20 tons of oil every 24 hours at average speed. Harland & Wolff, Glasgow, built the engines, and Brown & Son, Glasgow, constructed the vessel, of which Capt. G. P. Matthews is master.

Upholds Sub-Charterer

Federal Judge M. T. Dooling, at San Francisco, has handed down a decision in favor of Sudden & Christenson, in regard to chartering of the steamer *TAMPICO*. The firm was given judgment for \$17,900, with interest at 6 per cent, since May 1916. The *TAMPICO*, according to the evidence, was chartered in 1915 by the Crossett-Western Co. from the Pacific Coast Steamship Co. She was then sub-chartered to Sudden & Christenson for two voyages to the west coast, but was diverted by the original charterers after she had taken on a cargo of nitrate for W. R. Grace & Co., for delivery in New York. Later, the *TAMPICO* was ordered to return to San Francisco, and the cargo was sent on by rail to New York. The decision covers a cross complaint filed by Sudden & Christenson asking for \$880 railroad expenses, and a similar amount demanded by the original charterers.

W. J. Love, vice president of the Emergency Fleet corporation, in charge of traffic, announces that a monthly line of shipping board steamers will be established to South and East African ports, beginning in May,

from New York. This service will be under the management of the Mallory Transport Lines, Inc., and will provide a boat a month. Six cargo carriers will be used. The first call will be at Cape Town, followed by stops at Port Elizabeth, East London, Durban, Beira and possibly as far as Zanzibar and Mombasa. This will be the only American line operating on this route.

Vessel Transfers

Sale of the steamer *POZNAN*, formerly the *SUWANEE* and an interned German vessel, has been made at United States marshal's sale to the Luckenbach Steamship Co. She had been bought from the shipping board by the Polish-American Navigation Corp.

The British steamer *MELVILLE DOLLAR* has been sold to the Kishimoto Kaisha, of Kobe, Japan, by the Robert Dollar Co., which will rename its new steamer, the *CELESTIAL*, as *MELVILLE DOLLAR*, to replace the steamer just sold.

Coos Bay Lumber Co. has purchased the steamer *COTTONPLANT*, 4125 tons, from the shipping board. The steamer is being converted to an oil burner on the Atlantic coast and will then steam to San Francisco to engage in the coastwise lumber business.

The Columbia River Packers' association has bought the steel ship *TONAWANDA* from the government for an announced price of \$21,750, for use in the Alaska trade.

The steam schooner *CLEONE*, 126 tons, sold at auction by the United States marshal, was purchased for \$1250 by Stanley Dollar. She was owned by the A. W. Beadle Co., which turned her over to the auction block to satisfy judgments.

The Ocean Transport Co., a Japanese corporation, has purchased the steamers *TACTICIAN* and *MAGICIAN* from the Harrison line. This purchase marks 42 steamers that have been bought by Japanese interests from foreign owners in the past year.

The Crowley Launch & Tugboat Co., San Francisco, announces the purchase of the tug *SEA ROVER* from the navy department for \$23,700. *SEA ROVER* is a steel sea-going tug, 135 feet long, equipped for ocean towing, and was commandeered by the government from the Red Stack Tugboat Co. in San Francisco in 1917.

The steamer *CATHAY*, recently purchased by the Robert Dollar Steamship Co. after her construction in China for the United States shipping board, has been renamed *DIANA DOLLAR*, and has been placed in the Puget sound-Oriental service.

Sale by the shipping board of the following vessels to the Luckenbach Steamship Co., is reported: *EASTERN SOLDIER*, 10,625 tons, built by the Japanese; *SOUTH BEND*, 12,130 tons; *MARCIA*, 11,876 tons; and *EDELYN*, 12,500 tons.

The steamer *BERGEN* has been sold by Dr. A. C. Smith to Los Angeles interests for \$15,000. The steamer is now at the Crowley yards, in Oakland, Cal., being put into condition for the trip south.

The Tri-National Steamship Co. recently secured the steamer *BELVERNON* to replace the *BORNSHOM* on the Boston-St. John's-Halifax service.

C. K. West, manager for the Asiatic-American Steamship Co., has opened an office at 524 Board of Trade building, Portland, Oreg.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to May 4, 1922, on Future Loadings

New York to	Grain	Provisions	Cotton		General cargo		††Finished steel	Coal from Virginia cities	From North Pacific Ports to	Lumber Per m. ft.
			(H.D.)	Flour	cu. ft.	100 lbs.				
Liverpool.....	3/0	\$0.60	\$0.25	\$0.19	\$0.40	\$0.75	\$7.00T	.....	San Francisco.....	\$6.25 to 6.50
London.....	3/0	0.60	0.25	0.19	0.40	0.75	7.00T	.....	South California.....	7.00 to 7.50
Christiania.....	\$0.24	0.35	.....	0.28	0.45	0.90	7.00T	.....	Hawaiian Islands.....	11.00 to 12.00
Copenhagen.....	0.23	0.35	.....	0.28	0.45	0.90	7.00T	.....	New Zealand.....	13.00 to 14.00
Hamburg.....	0.14	0.20	0.25	0.19	0.45	0.82½	7.50T	.....	Sydney.....	13.00 to 14.00
Bremen.....	0.14	0.20	0.25	0.19	0.45	0.82½	7.50T	.....	Melbourne-Adelaide.....	15.00 to 16.00
Rotterdam.....	0.14	0.30	0.22½	0.19	0.40	0.75	4.50T	.....	Oriental Ports.....	10.00 to 12.50
Antwerp.....	0.13	0.27½	0.22½	0.19	0.40	0.75	4.50T	.....	Peru-Chile.....	15.00 to 18.00
Havre.....	0.18	0.40	0.27½	0.23	0.40	0.75	9.00T	.....	South Africa.....	22.50
Bordeaux.....	0.18	0.40	0.27½	0.23	0.40	0.75	9.00T	.....	Cuba.....	18.00
Barcelona.....	0.22	0.75	0.75	8.00T	—20.00T—	—	8.00T	.....	United Kingdom.....	90s
Lisbon.....	0.22	0.75	0.75	8.00T	—20.00T—	—	8.00T	.....	United Kingdom (ties).....	70s
Marseilles.....	0.23	0.60	0.75	6.00T	—20.00T—	—	6.00T	.....	New York.....	12.00 to 13.00
Genoa.....	0.20	0.75	0.42½	0.42½	0.50	1.00	9.00T	\$4.25T	New York (ties).....	11.00 to 12.00
Naples.....	0.20	0.75	0.42½	0.42½	0.50	1.00	9.00T	4.25T	Buenos Aires.....	17.00
Constantinople.....	0.32	15.00T	0.75	0.25	—20.00T—	—	12.00T	.....	Flour and Wheat	
Alexandria.....	0.32	15.00T	.....	0.25	—20.00T—	—	12.00T	.....	Oriental ports.....	\$5.00
Algiers.....	0.25	0.75	.....	7.00T	—22.00T—	—	12.00T	4.25T	U. K and Continent.....	30s to 35s T
Dakar.....	.....	14.50T	.....	15.00T	—20.00T—	—	10.00T	.....	Scandinavia.....	37/6T
Capetown.....	10.50T	23.00T	.....	15.00T	—23.00T—	—	12.50T	.....	Mediterranean.....	40s to 42/6T
Buenos Aires.....	.....	.....	.....	.....	—20.00T—†	—	8.00T†	4.00T	Steel	.....
Rio de Janeiro.....	.....	.....	.....	.....	—12.00T—†	—	7.50T†	4.00T	Oriental ports.....	\$ 5.00T
Pernambuco.....	.....	.....	.....	.....	—19.50T—†	—	9.00T†	4.25T	Cotton	.....
Havana.....	0.17½*	0.37½*	.....	0.17½*	0.47*	0.94*	0.20*	1.50T	Oriental ports.....	\$10.00T
Vera Cruz.....	.....	0.45	.....	0.20	0.45	0.90	0.35	2.00T	Apples	.....
Valparaiso.....	.....	1.07	.....	0.70	0.45	0.80	12.00T	4.50T	United Kingdom.....	\$1.00 per box
San Francisco.....	.....	0.60	.....	0.85	.....	.....	0.60	.....	Copper	.....
Sydney.....	.....	.....	.....	.....	20.00 to 25.00	.....	12.50	.....	Oriental ports.....	\$4.50 to 5.00
Calcutta.....	.....	21.00T	.....	.....	—21.00T—	—	18.00T	.....	

T—ton. †Landed ††Heavy products limited in length. *Extra charge for wharfage.

Principal Rates To and From United Kingdom

	s	d		s	d
Grain, River Plate to United Kingdom.....	30	0	Coal, South Wales to Buenos Aires.....	14	6
Coal, South Wales to Near East.....	14	6	Iron ore, Bilbao to Middlesbrough.....	7	6
Coal, Newcastle to France.....	6	0	General British market, six months time charters, per ton per month.....	4	9

Bunker Prices

At New York				At Philadelphia				Other Ports	
	Coal alongside per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon		Coal per ton	Fuel oil per barrel	Diesel oil per gallon		
Apr. 6, 1921	\$6.40 @ 6.75	\$1.95	6.5 cents	Apr. 7, 1921	\$5.75 @ 6.00	\$1.98	5.7 cents	Boston coal, per ton, \$7.40	
July 8.....	5.75 @ 6.25	1.45	5.25 cents	July 7.....	4.90 @ 5.45	1.47½	4.5 cents	Boston, oil, per barrel 1.06	
Oct. 4.....	5.85 @ 5.15	1.45	5.25 cents	Oct. 6.....	*6.10 @ 6.25	1.80	4.25 cents	to 1.10	
Jan. 9, 1922	5.50 @ 5.90	1.25	5.50 cents	Jan. 9, 1922	*5.10 @ 5.35	1.50	5.00 cents	Seattle, coal, per ton, 7.50	
April 6.....	5.30 @ 5.90	1.16½	4.75 cents	April 10.....	*5.90 @ 6.25	1.05	4.25 cents	to 8.50	
May 4.....	6.25 @ 6.75	1.16½	4.75 cents	May 4.....	*6.50 @ 6.75	1.07	4.25 cents	Cardiff, coal, per ton, 21s	

*Trimmed in

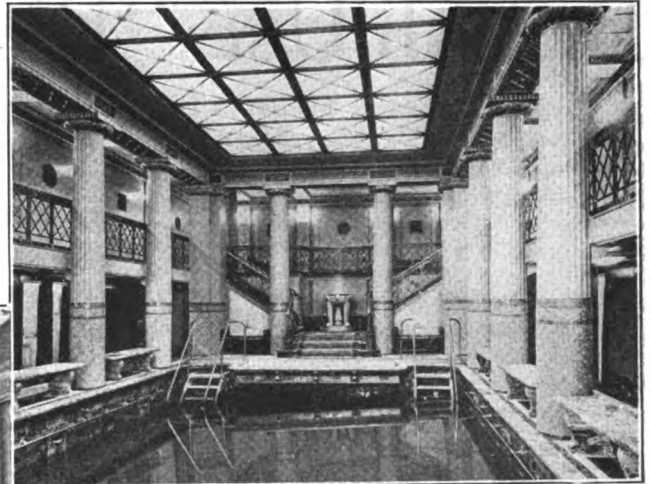
British Yard Strike Brings Wage Cut

From Our European Manager

London, May 10. (By cable).—Shipbuilders have won their point in the shipyard strike. The settlement of the strike just announced shows that wages will be cut. Slight revival of ship construction is expected to follow. Chartering in the River Plate run is more active, this route recently having been oversupplied with vessel tonnage. Iron ore has been fixed from Bizerta to

Philadelphia at 9 shillings. In the Far Eastern trade, the only activity is in carrying coal from Africa to India, which is bringing 16 shillings. European bunker prices have gone upward in sympathy with the American coal strike. Plate rates on grain have advanced from 25 to 30 shillings, but coal rates to the Near East and South America have dropped slightly.

Views on the Majestic, largest ship in the world. Built by Germans as the Bismarck, she came to England as a war prize and to the White Star Line by purchase. She carries 4100 passengers and 1000 crew, registers 56,000 tons and is 956 feet long



Swimming pool has an area of 820 square feet, depth of 3 to 9 feet with 30 dressing rooms and a 300-person gallery adjoining



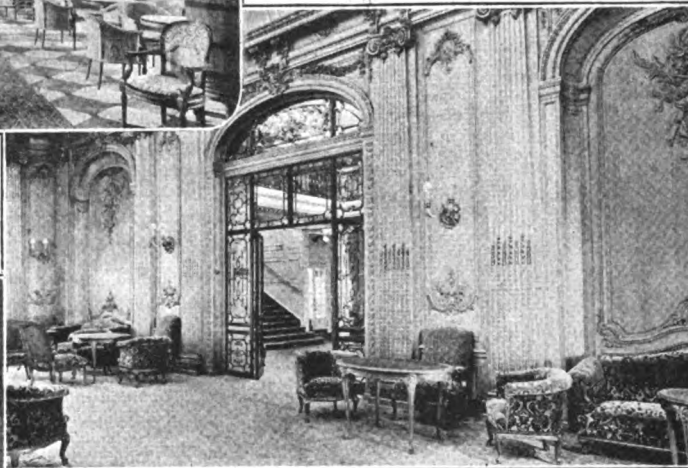
Private sun veranda adjoining large suites of eight rooms each



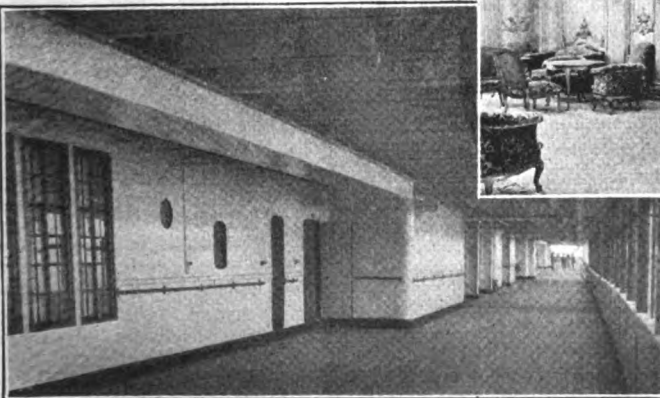
Dining room seats 652, its 31-foot ceiling being loftiest ship room ever built



Palm court with its rich furnishings



Oak paneled lounge used for dancing



Promenade deck, one of nine decks on the ship. Four times around is a mile, while 900 steamer chairs are provided

Row

British Use "Big Bertha" Tactics

Threaten To Employ United Strength of Entire Empire if President Harding's Ship Policy Is Adopted

From Marine Review Foreign News Service

ANXIETY over the possible effect on British shipping of the Harding policies for protecting American shipping has led to the firing of another preliminary gun in the campaign of retaliation which is threatened by British shipowning interests. So far, verbal broadsides on this question have come exclusively from British business organizations, but the government itself is now unlimbering and the latest statement emanates from Stanley Baldwin, president of the board of trade. Mr. Baldwin takes occasion to point out that the British Empire will deal with any threatened shipping competition as a unit. Indirectly at least his statement seems to be designed to frighten American and other competitors by intimating that the whole brood of British lions may get into action. Mr. Baldwin's statement is as follows:

"In the circumstances of the present day, our shipping has to face many difficulties it has never had to face before. It has not only got to face a period of intense competition but also a deliberate attempt on the part of other countries to build up mercantile marines at our expense. Shipping is our life blood and, therefore, this problem of the mercantile marine is not only a problem for this country but for the whole Empire, and the Empire should draw together and present a united front against any attacks which are made, and it should be known to the world that if any part suffers, the Empire will stand as one man."

Their High Moral Tone

In seeking to justify their policy, British interests are not only arguing from the economic standpoint but are endeavoring to take up a moral position as well. For many years such tactics have been a characteristic feature of British foreign trade policy. Time and again the British Empire has cloaked aggressive tactics of a purely business nature in the guise of human welfare, freedom, etc. The well known phrase, "the white man's burden," as applied to the development of trade with backward peoples, is an expression of this idea of covering a plain business proposition with the veneer of a high moral tone.

On the whole, this policy has been decidedly successful because in the main it has usually possessed elements of truth, although there have been not-

The Lion Roars

A RECENT statement of British shipping policy in the face of American competition is as follows:

"If there is to be a general policy of flag discrimination with an expansion of coastwise laws to unreasonable lengths, it may be found that the British peoples will have something to say on the matter. If the nations widely distributed over the oceans of the world which constitute the British Empire, with a population of 440,000,000, were to adopt a coasting law in favor of British Empire shipping, we should, as Sir Frederick Lewis has remarked, 'be quite justified in doing so by precedents.'"

"This policy is in full sympathy with the conclusions reached by the Imperial Shipping committee. If the necessity arises, the British government, acting in association with other governments overseas, will be able to demonstrate that the British Empire is a reality, and that when the call for action comes, as was proved during the late war, it acts as a single unit."

able exceptions such as the aggressive South African war. In the present instance, British shipping interests are pointing out that they alone in all the world stand as the champions of the great "Four F's"—Freedom of the seas; Freedom of ports; Freedom of trade; and Freedom of contract. On its face this looks like a strong statement of principles, and it in fact does represent principles which have great moral and economic force, but it might be freely translated in the present instance into, "Hold what we have got."

On the purely economic side, advocates of the British shipping position are on surer ground. Sir Frederick Lewis, chairman of the Chamber of Shipping of the United Kingdom, seems to realize this and in a recent statement said:

"Assuming that every country commenced to impose discriminatory conditions in favor of its own shipping, we should arrive at the point of absurdity where each country would be sending its own ships to bring its own

imports, obviously a most uneconomical procedure, as it would result in each vessel making its outward voyage in ballast, unless of course cargoes were exchanged at some point in the middle of the ocean, a Gilbertian proceeding."

The Coastwise Question

Commenting directly on the Harding program, a prominent British shipping writer said recently:

"Everyone who has been following shipping questions during the past years must have been impressed by the tendency of some foreign countries to indulge in flag discrimination, and since we own a good deal more tonnage than any other country, we should be the chief sufferers if that policy succeeded in diverting trade from the free and open international freight market for which we cater. Of course we have always suffered to some extent from flag discrimination, because a number of countries, quite mistakenly, as we believe, reserve to their own ships all coastwise traffic. What constitutes coastwise traffic is sometimes interpreted very generously, as is illustrated by the proposal submitted to the United States congress to regard shipping to the Philippines as being coastwise, though there is not an American port nearer than many thousands of miles to this island, which is presumably to profit some time or other from the application of the doctrine of self-determination, obtaining a measure of self-government. The Philippines will become an American dominion though there is at present no indication that congress will grant to the Philippines any such rights as are enjoyed by our old established dominions, or are being conceded to Egypt, Ireland, or even India."

"Of the American proposals, it is apparent that they can only attain their object if ships under other flags are driven out of the North Atlantic—apart from the influence exerted elsewhere than in the North Atlantic. What the attitude of Americans generally, and especially producers and exporters, may be toward this scheme has still to be revealed. It happens that at the moment the United States is experiencing a good deal of difficulty in disposing of its surplus goods. What it needs is more active markets for its exports—more people overseas able to buy its goods. If American goods are rendered dearer by legislative interference with sea transport, the position may easily be reached in which it will be impossible to sell those goods abroad, although the world badly needs them."

"As Sir Norman Hill has pointed out, if a nation used its seacarrying power to concentrate the commerce passing through its ports in its own ships it would court disaster to that

commerce. It would deprive that commerce of the enormous advantage all trades derive from a free freight market. It would cripple the countries to which it sold by depriving them of one of their means of paying for their purchase. For instance, if our mercantile marine, which is one of our natural industries, were weakened we should earn less money in freights and have less to spend in the United States or elsewhere on food and other things."

The crux of the whole British situation is shown in the accompanying box in which the united action of all ports of the British Empire to pro-

tect British shipping and if necessary discriminate against the shipping of other countries is threatened.

Playing The High Card

In other words, our Anglo-Saxon cousins have chosen to play their strongest card first because there is little doubt that the various members of the British Empire could be rallied quickly to a common shipping policy in defense of their own interests and those of the mother country. The very distribution of the Empire throughout

the world makes this inevitable. Also, critical American observers in London are constantly impressed by the essential economic and political unity of the British Empire.

Therefore, if the United States embarks on the Harding policies for protecting American shipping, it would be well to prepare for vigorous retaliation on the part of British interests everywhere, which would make the recent Egyptian cotton controversy appear more or less like an old ladies sewing bee.

What the British Are Doing

Short Surveys of Important Activities in Maritime Centers of Island Empire

THE annual report of the Cunard Steamship Co., London, states that the profits last year were £949,771, compared with £1,181,621 in 1920. Considering the adverse conditions which prevailed everywhere in business last year, the Cunard's small shrinkage in profits reflects a prosperous situation and indicates the strong position of this great British company. The report of the Cunard company is of special interest since practically all of its business is confined to the north Atlantic trade between the United States and Great Britain.

The average annual gross profits of the Cunard Steamship Co., since 1910 are as follows:

Year	Profit	Year	Profit
1910.....	£ 887,161	1916.....	£2,339,752
1911.....	791,011	1917.....	1,108,926
1912.....	841,898	1918.....	1,207,125
1913.....	828,096	1919.....	1,724,920
1914.....	867,999	1920.....	1,181,621
1915.....	1,164,746	1921.....	949,771

As a result of the advance in sterling exchange, the Cunard profits for 1921 are equivalent to \$4,118,000, compared with \$4,200,000 in 1920. In other words the advance in exchange balances the loss in profits as expressed in sterling so that the dollar value of the company's earnings for the two year's is practically the same. The earnings for both 1921 and 1920 show considerable shrinkage compared with 1919 when the profits were £1,724,920. The usual dividend of 7½ per cent was paid on the common stock out of the profits for last year. In fact the savings on income and excess profits tax, together with lower interest rates on borrowed money resulted in the net profit for 1921 being £669,106

(\$2,950,000), compared with £638,291 in 1920.

The directors mention in their report that the services of the company both for freight and passenger business although considerably interfered with by labor disputes from time to time, have been maintained with a greater degree of regularity than was possible during the preceding year. While not yet normal, owing to the protracted delay in the delivery of new tonnage, they will be materially strengthened in the course of the next month or two. The company has building and due for delivery before Dec. 31, 1922, a large number of oceangoing steamships and before the end of the current year the fleets under the control of the Cunard company will be increased to over 1,000,000 gross tons.

The statements of earnings for the past two years are as follows:

	1921	1920
Profits	£ 949,771	£1,181,621
Brought forward	169,075	144,187
Total profit	£1,118,846	£1,325,808
Income tax, bond interest, depreciation, etc.	449,740	687,517
Net profit	£ 669,106	£ 638,291
To reserve	Nil	Nil
Preference dividends	135,000	135,000
Ordinary dividend	334,216	334,216
Carried forward	£ 199,890	£ 169,075
Dividend on common stock, per cent	7½	7½

THE strike of wireless operators on British ships has been settled. The men went out because they were asked by the owners to occasionally do a little work in between the long periods of loafing which are inevitable in the discharge of their duties at

sea and on shore. In the latter case, the pilferage committee of the Chamber of Shipping of the United Kingdom recommended that wireless operators be employed while in port to assist the deck officers in tallying and watching the cargo. To bring this about, the various steamship owners took steps to make the wireless operators part of the ships' personnel for performing duties in ports under the orders of the captain. The strike has been settled on a basis which will permit of the men being employed in useful work about the ship in addition to their intermittent duties as telegraphers.

* * *

FOR about a month, British shipyard workers were on strike against reduced wages and particularly against the removal of certain bonuses granted during the war. At the end of April an agreement was reached between the employers and the unions for the settlement of this dispute on a basis approximating the employers' demands. The proposed settlement was submitted to the men for a vote with a strong recommendation for its acceptance by the leaders of the union. The men resumed work at a reduction of 10s 6d per week (\$2.33) to be followed by two further cuts of 3s 0d (66 cents) per week each at intervals of a month. The men accepted the reduction as inevitable and work was resumed in British shipyards, that is, in such yards as have orders. At the present time, only about 25 per cent of the industry is engaged, but it is hoped that this final settlement of the labor question will enable shipbuilders to

quote more favorably and to secure a moderate amount of new business.

In the meantime a good many repair and finishing contracts have been lost through the dispute. The new Cunard liners LACONIA and ANDONIA have been sent to Holland for completion at a loss in wages to British shipyard workers of £250,000 (\$1,000,000). The oil burning steamer TIFLIS, which was to have undergone extensive repairs at North Shields has been sent to Bilbao, Spain. This job represents a wages loss of \$17,600. Numerous others ships have been sent to Holland for repairs and the total losses in wages during the dispute have amounted to about \$4,000,000.

* * *

WILLIAM BEARDMORE & CO., Ltd., launched at Dalnair, Scotland, recently the CONTE ROSSO, the first of two ships under construction for Lloyd Sabauda, Genoa, for its passenger and cargo service between Italy and South and North America. The general particulars of the vessel follow:

Length, overall, feet	591
Length on L. W. L., feet	580
Length B. P., feet	570
Breadth, feet	74
Depth to shelter deck, feet	40
Load draft, feet	26
Gross tonnage, about	18,000
Service speed, knots	18½
Total passenger and crew, about	2,820

The vessel has a straight stem well raked forward, elliptical counter stern continued below in a graceful "OG", and bossed so as to accommodate the underwater steering gear, 2-pole masts, and two funnels. Accommodation is provided for about 230 first class, 290 second class, 1880 third class and 420 officers and crew. Public rooms and ample recreation and airing spaces are arranged for the comfort of all classes.

The first class is arranged in cabins of large size, fitted for one and two persons, no upper berths being provided. A number of special cabins comprising bedroom and dressing room with bathroom lavatory are arranged. The first class dining rooms are unique, in that, the space between three decks is utilized for an upper and lower dining saloon, thus securing headroom for both of about 12 feet 6 inches.

The designs for the first class public rooms have been prepared by Italian architects, and with the ample headroom as above, the decorative work will have an appearance seldom seen on board such ships. The first class public rooms are; upper and lower dining saloons, music room, social hall, library, and smoking room, with cafe at after end. In addition, a large deck area is appropriated for recreation and promenade at the fore

end of the upper promenade deck well protected at front and sides and lighted by windows.

The second class generally is arranged in large cabins for four persons, each cabin having light and air from ships side. Public rooms for second class are; dining saloon, lounge and smoking room.

Third class accommodation is of the open-berth type in large compartments below the shelter deck. Dining accommodation and airing spaces are provided on shelter deck, forward and aft.

The equipment of the vessel generally is of the latest type. The ventilation is on the Thermotank system. Browns' steam steering gear, steam winches, and deck machinery, electric boat winches and wireless installation are provided. Separate galleys are provided for first, second, and third class. Accommodation for the first and second class are on the boat deck with service lifts to the saloons, and for the third class on the shelter deck forward and aft close to the dining space. Life saving appliances are provided for all on board. The boats generally are in nests of two to be put out by davits of Welins type.

The propelling machinery, which is supplied by the builders, consists of two sets of Parsons compound turbines, each set comprising one high pressure and one low pressure turbine, and having an astern turbine incorporated in each low pressure casing.

The turbines are arranged to drive the propeller shafts through double reduction gearing of the double helical type, each high pressure and low pressure turbine transmitting the power through an independent pinion to its respective propeller shaft. Steam is supplied by six double-ended and two single-ended boilers of large size fitted with Howden's forced draft, and Robinson type superheaters. The boilers are primarily to burn oil fuel, but can readily be converted for burning coal.

* * *

IN SPITE of temporary labor troubles over wages, indications show that shipbuilding in Great Britain will soon take a turn for the better. These expectations are based on recent activities of certain prominent British shipowners. At the annual meeting of the Cairn line, Sir W. J. Noble, chairman, made the following statement:

"Although we are potential buyers of ships at the present moment, I do not propose to offer any pessimistic views as to the future of shipping. I have confidence in its future, particularly in that of British shipping. If not tomorrow, then the day after tomorrow, we

shall get back to a commercial basis. At the present moment, the lowest price at which shipbuilders will produce a vessel suitable to our trade is £20 (\$88.20) per deadweight ton. Until these prices are reduced we shall, in the meantime, probably have recourse to the second hand market for our requirements."

The Peninsular & Oriental Steam Navigation Co. has just offered an issue of £3,500,000 (\$15,000,000) of 5½ per cent bonds, the proceeds of which, it is officially stated, are to be applied, "to the general purposes of the company and more especially to the construction of new vessels to replace those destroyed by enemy action during the war and to build others to meet the growing requirements of the company's business." Lamport & Holt, Ltd., another prominent steamship company, have just issued £2,000,000 (\$8,800,000) of 5 per cent bonds which also are understood to be for shipbuilding purposes.

* * *

COLONEL Amery, secretary of the admiralty, recently stated in parliament that the total payments to April 10, by the British government on account of contracts suspended as a result of the Washington naval disarmament agreement amounted to £935,218, (\$4,112,000). He explained, however, that all but £60,000 (\$265,000) of this sum is in connection with material which will be required in any case for the two small battle cruisers which are to be built under the Washington agreement as substitutes for the four super-Hoops which were previously planned.

* * *

RECOMMENDATIONS respecting the transport of wood and lumber cargoes on deck, agreed on by an international committee, have been submitted by the Chamber of Shipping to the board of trade. The committee included representatives of Denmark, Finland, Germany, Great Britain, Holland, Norway and Sweden, and its recommendations were subsequently approved by Belgium. The proposed new rules have been based on the regulations in Norway, as these were thought to be the product of the widest possible experience, while account was also taken of the regulations in force in Holland since 1909.

In Germany, during March, 8 ships, aggregating 36,700 tons, were launched; 13 ships, 86,600 tons completed; and 16 ships 51,747 tons were purchased. The proportion of foreign registered tonnage in the Hamburg trade for March was 71.5 per cent; while the proportion of foreign vessels by number in the Hamburg trade came to 42.4 per cent, of which 2 per cent was ascribed to American vessels.

Book Review

Jane's Fighting Ships 1921; 634 pages, 8 x 12¾ inches; published by Sampson Low, Marston & Co. Ltd., and furnished by MARINE REVIEW, Cleveland, for \$15 net.

Peculiar interest attaches to this year's edition of this standard reference list of naval ships. The Washington disarmament conference brought into prominence the naval ships of the five leading world powers, both with respect to the

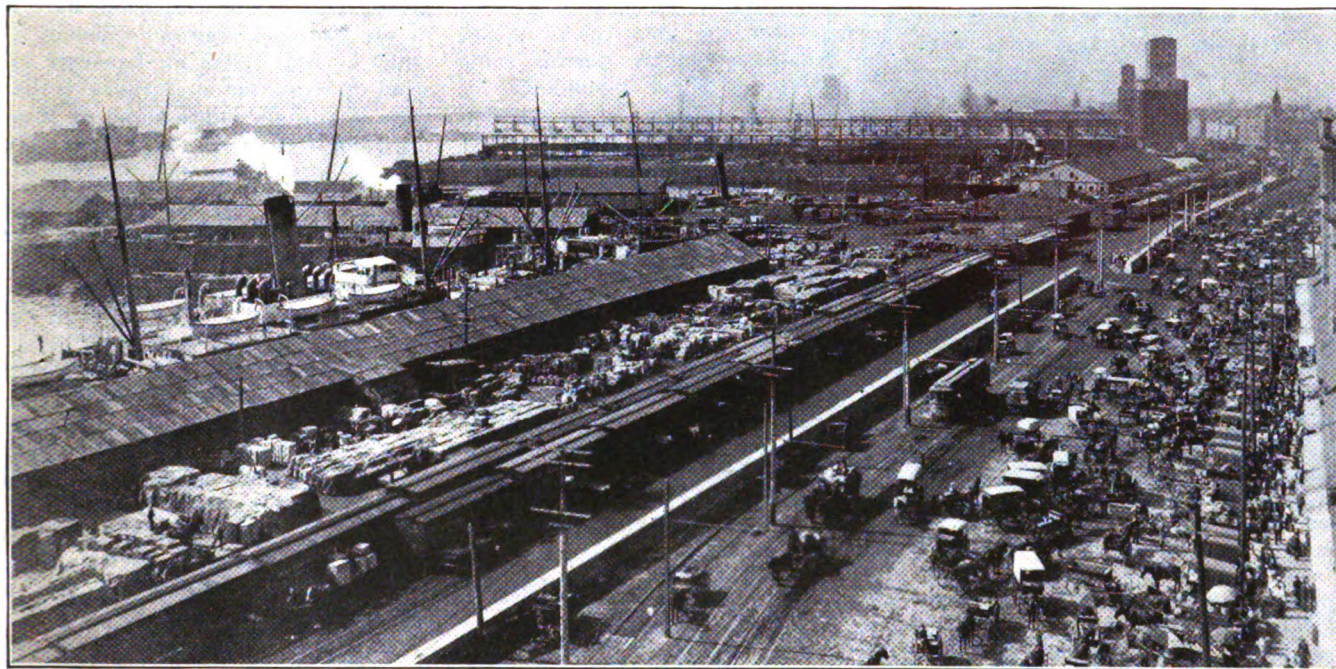
sea fighters which are to be retained and those which are to be scrapped. This edition affords a complete reference to the active naval establishments not only of the five powers but of all the nations of the world.

This book portrays by silhouettes, line drawings and photographs a clear picture of the naval vessels of each country. In addition, details of size, armament, propulsion and construction are given for each vessel. Important navy yards of

the world are described both by word and picture. Also the present service of the majority of the ships is given.

In the case of the major powers, an analysis of the naval establishments also is given. This includes a study of the official ranks, rates of pay, division of fleets, naval programs, organization of fleets, personnel, etc.

An idea of the scope of the book is contained by the fact that approximately 2900 vessels are described.



WATERFRONT OF MONTREAL, CANADA'S BIG PORT AT THE HEAD OF NAVIGATION ON THE ST. LAWRENCE RIVER. SHIPMENTS OF GRAIN DURING THE SEASON OF NAVIGATION MAKE UP MUCH OF THE PORT'S TRAFFIC

Montreal Port Shows Rapid Growth

BY E. L. CHICANOT

MONTREAL is getting ready for business. The closing of navigation on the St. Lawrence river early last December ended not only the longest shipping season the port of Montreal has ever known but also its most active and profitable one. In the brief seven months of activity, nearly twice as much grain was exported as in the best previous year while the increases in other lines of agricultural products were, in some cases, phenomenal. If the Fordney tariff bill pleases no one else, the people of Montreal should at least have little quarrel with it. The time of its enactment synchronized with the ushering in of increased bustle at the inland port as the voluminous products of the farms of the prairie provinces, checked at their natural outlets on the international border, were diverted toward

the Canadian Atlantic ports, the principal of which is Montreal.

The pleasing feature to Canadians of this great importance of Montreal port is that it is not purely temporary. The underlying cause will tend to swell, in an ever increasing volume, the exports of agricultural stores which will have to find an ocean outlet. The effects of the Fordney tariff were not experienced throughout the entire summer season nor were overseas markets developed so as to yield full benefit. For these reasons, in the coming years trade from the Canadian metropolis may be expected to assume even larger proportions.

In the open season of navigation from May 1 to Dec. 1, 1921, a total of 140,036,445 bushels of grain reached the port of Montreal by boat and rail, a volume in excess of

all other Atlantic ports combined from Halifax to Philadelphia and Newport News, Va., including the port of New York.

Altogether a total of 64,500,000 bushels arrived by lake boats, and 75,500,000 bushels by rail. In the aggregate, wheat accounted for 56,652,609 bushels, corn 45,593,443 bushels, and oats 22,389,667 bushels. Shipments of wheat to Montreal from the United States rose from 11,648,250 bushels in 1920 to 27,526,000 in 1921 and corn from 85,816 bushels to 25,170,581 bushels.

Grain Exports Grow

The total export of grain of all kinds from Montreal in the season was 119,602,189 bushels. The full significance of this volume is realized when compared with the previous year's total of 53,143,305 bushels and

the previous record of the port, 75,361,829 bushels in 1914. Though wheat showed a striking increase, the most remarkable development was in corn, which comes almost wholly from the United States to the St. Lawrence river for shipment. Corn shipments jumped from about half a million bushels in 1920 to more than 43,000,000 bushels in the 1921 season.

This same swelling volume of exports is noted in all other agricultural products. The 1921 shipment of cattle to the overseas market did not begin on any large scale until the season was well advanced and yet in the seven months of open navigation, 35,000 head of cattle left for Liverpool and Glasgow. Cattle shipments in 1920 were practically insignificant and have not been important since the lifting of the United States embargo in 1897 leaving an unrestricted market to that country. Prior to that time, cattle shipments from Montreal constituted a brisk trade.

The growing importance of dairying in the dominion is reflected in Montreal's dairy shipments for 1921 which were much in excess of the previous year. Exports of butter from the port totalled 106,087 packages of 56 pounds each, of which 70,374 packages went to the United Kingdom and the continent, 29,219 packages to the United States, and 5974 packages to Newfoundland. This is an enormous increase over shipments of the previous year to all countries. Exports of cheese to the United Kingdom and the continent were 1,441,779 boxes of 45 pounds, to the United States 26,231 boxes and to Newfoundland 3263 boxes making a grand total of 1,471,273 boxes. Eggs, which went mainly to the British Isles and the continent, totalled 214,203 cases. Included in these shipments, it must be remembered, were consignments from the United States, while they do not include shipments made by rail to points within Canada.

So far attention has been given to discussing the agricultural export side of Montreal's development but this is justifiable when it is considered that the port's greatest importance lies in its being the outlet of the great western territories and that agriculture is pre-eminently Canada's first industry. Future development will come first and principally in this phase of activity.

Serves Ocean Lines

Other developments, either assured or projected, indicate just as clearly the general appreciation of the im-

portance of Montreal's future. Many shipping companies, for instance, are reported to be asking for docking rights and the spring should bring every increased activity to the St. Lawrence. Already the St. Lawrence river carries more than one-third of Canada's national trade to and from the port of Montreal, the annual volume of which exceeds \$750,000,000. Prospects are that both the volume and the proportion will increase.

Montreal's other aspect of importance in national life is as a western terminal for the great liners plying the Atlantic. In this regard, some movements of broad significance indicate the resumption of immigration on a large scale and show a growing realization that Montreal is many miles nearer London than New York. In the summer 1921 three transatlantic passenger steamship companies used Montreal as a port of destination for their vessels. These were the Anchor-Donaldson, the White Star-Dominion, and the Canadian Pacific. Vessels of these lines made 84 round voyages to Montreal in the course of the 1291 season, composed of 58 round trips for the Canadian Pacific, 15 for the White Star-Dominion, and 11 for the Anchor-Donaldson line. Approximately 106,310 passengers carried on ocean liners passed over the wharves of Montreal port during the season.

The announcement is officially made that the Cunard Steamship Co., will, with the reopening of navigation on the St. Lawrence, resume its use of the port of Montreal as an American destination for its transatlantic vessels. Five new oil burning liners, comprising some of the company's largest vessels and several of which will sail for Canada on their maiden voyages, are to ply from the St. Lawrence port to London for the English service, commencing in May with a sailing every week-end. In all, according to the plans of the steamship companies, 15 additional transatlantic passenger liners will be running to Europe from Montreal this summer. The Anchor-Donaldson line is adding two vessels to its fleet, the White-Star Dominion line will have three more vessels sailing under its pennant from Montreal and the Canadian Pacific will have four new vessels.

Will Aid Immigration

In addition to the volume of ordinary tourist traffic, which is constantly growing, Canada is confidently expectant of a large influx of settlers from overseas. Her immigration has of recent years been greatly restricted from causes due to postwar conditions and restrictions imposed by the

government. A new, more aggressive immigration policy, with greater freedom of entry is expected with the new government, and in the reception of this tide Montreal, as the main gateway, will figure largely.

Montreal is already the second port of the American continent, its fifth city in population, and the greatest inland port of the world. It is the principal port on the American continent for the export of grain and other agricultural produce. Now that the greater part of the tremendous harvest of the Canadian prairies is finding its outlet by way of the St. Lawrence instead of across the international border there is a bright future ahead of Montreal, considered only as a port. The task of developing the accommodation and capacity of the harbor is a continuous work. To date, at a cost of more than \$30,000,000, the harbor provides 100 steamship berths from 350 to 750 feet in length, with a depth of water from 25 to 35 feet. Two large elevators at which nine vessels can be loaded with grain simultaneously, 60 miles of harbor railway, and a total wharfage of about 12 miles are now provided. Montreal has trade relations with every country of the globe, 12 of the world's big shipping lines use the port as a terminal, while the number of vessels arriving yearly approximates 1000.

Tower To Honor Seamen

A clock and signal tower in the harbor at Montreal has been completed as a memorial to the merchant seamen who lost their lives in the world war. It stands 180 feet above water level at Victoria pier. The clock has four faces, each 12 feet across, and a bell which weighs four tons and is six feet across. The clock will be electrically operated and at noon daily will discharge a bomb of the type in common use on ships.

American Mariners Elect

At a recent meeting of the American Mariners' association held in New York, George J. O'Brien, for 30 years identified with the marine industry, was elected president for a term of two years. Other officers elected are: First vice president, E. T. Akers; second vice president, R. D. Daly; secretary, George Glancey; and treasurer and general counsel, W. M. Brouillard.

The Submarine Boat Corp., Newark, N. J., has awarded a contract to the McNab Co., Bridgeport, Conn., for a reversible rudder suitable for a 56-inch propeller, complete with control and gear.

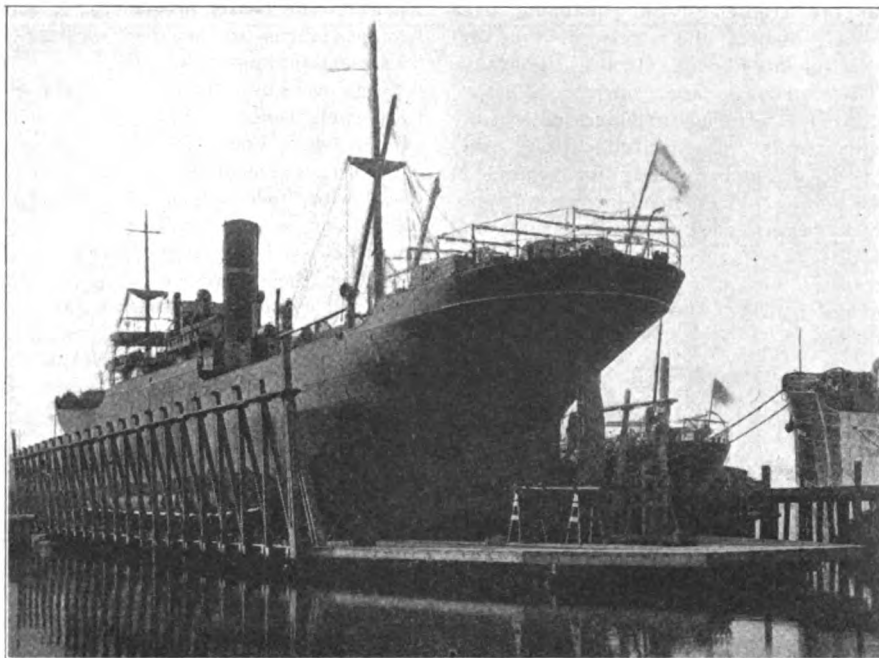
Builds Largest Railway Drydock

New Dock at Norfolk Repair Plant Can Handle Big Ocean Freighter—Ship Drydocked in 45 Minutes

LARGE railway drydocks for repairs yards have proved their utility. Originally planned for small vessels, this type of dock has been developed until it can handle standard ocean freighters. This is shown by the completion recently at the Colonna's Shipyard Inc., Norfolk, Va., of a railway drydock with a lifting capacity of 5000 tons of actual weight. This dock will lift the 10,000 to 12,000-ton deadweight class steamers. It is the largest railway drydock on the Atlantic coast and the largest commercial drydock in the port of Norfolk.

This railway drydock was installed by the Crandall Engineering Co., drydock engineer, Boston. This company has specialized in the railway type of drydock, which was originated and developed by the Crandall company and its predecessors. This development began in 1854 and today the total lifting capacity in weight of railway drydocks of the company's design in actual operation is more than 150,000 tons. Low first cost and economy of operation are claimed for this type.

The new drydock at Norfolk, as illustrated, has a 4-way type track. This track is of sturdy timber construction, heavily bolted and braced, resting on a foundation of yellow pine piling driven to refusal and accurately cut to the proper gradient. The track is railed with flat steel plates of a width and thickness designed to give maximum lifetime. The

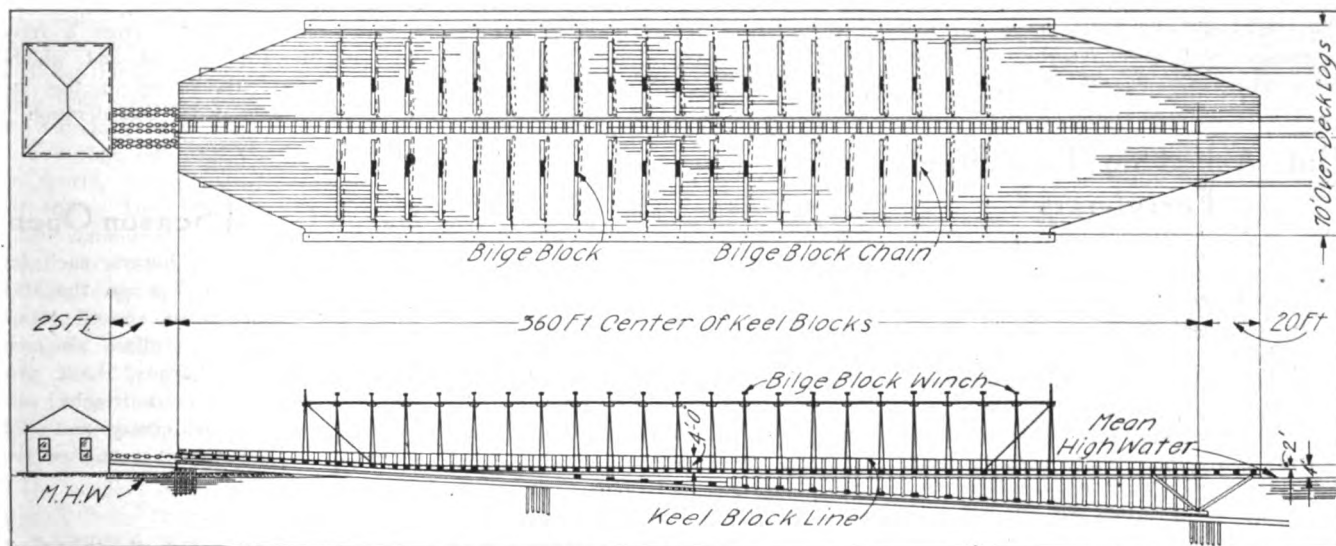


STEAMER LARENBERG ON NEW RAILWAY DRYDOCK OF 5000 TONS LIFTING CAPACITY AT NORFOLK

cradle moves along the track supported on connected free rollers so proportioned and spaced as to give minimum friction.

The cradle which actually carries the ship is also of heavy, yellow pine construction. The length over the keel blocks is 360 feet which, with a fantail of 20 feet long, gives an overall length of 380 feet. The overall width is 70 feet with 63 feet in the clear between the up-rights. At mean high tide ships can

be docked drawing 14 feet forward and 19 feet aft. The cradle is built up aft by columns and heavy bracing so that the keel blocks conform to the usual slope of the ship's keel when in light condition thus avoiding any distortion or stress to the ships. On each side of the cradle are up-rights supporting a docking platform conveniently located for handling lines and centering ships when being docked. On this platform are located the hand winches



PLAN AND SECTION OF LARGE RAILWAY DRYDOCK JUST COMPLETED AT NORFOLK. THIS IS THE LARGEST DOCK OF THIS TYPE ON THE ATLANTIC COAST AND THE LARGEST COMMERCIAL DRYDOCK IN NORFOLK

for pulling the bilge blocks against the ship. The bilge blocks are of the patent releasing type enabling one man to readily release and replace a bilge block under full load.

The cradle is operated by six hauling chains of open-link type attached to the cradle by an equalizing gear which assures the stress in the several chains being always the same. These chains are operated by a powerful hoisting machine electrically operated, enabling a full capacity ship to be drydocked ready for repairs in 45 minutes. The machinery is of special design with heavy gearing and shafts. It is equipped with an automatic brake which stops the machine in case the electric circuit is broken.

New Todd Officers Named

Officers and directors have been named for the Todd Shipbuilding & Drydock Co., Inc., Mobile, Ala., a new subsidiary of the Todd Shipyards Corp., New York. They are: President, William H. Todd; first vice president, Arthur E. Goddard; second vice president, Angus Marshall; secretary and treasurer, John D. Reilly; and assistant treasurer, John F. Butler. The directors are William H. Todd, Arthur E. Goddard, David Lanman, James H. Lyons, H. Hartwell and Angus Marshall.

New Drydock Operating

Portland's new 15,000-ton drydock is now in full commission, the first job being that of lifting the 12,000-ton steamer EDGAR F. LUCKENBACH. The large freighter was in position on the dock in 65 minutes from the time the pontoon pumps started. The first sailing vessel to be docked was the schooner ECOLA. The drydock was constructed by the commission of public docks and was later taken over by the port.

Bids Asked on Two Steel Ferryboats

The San Francisco-Oakland Terminal Railways Co. which owns and operates the Key Route ferry between San Francisco and Oakland, issued specifications recently for construction of two steel ferry boats to cost in the neighborhood of \$300,000 each, and to be completed within nine months after contracts are let. Bids for the vessels were opened May 1.

Dimensions of the boats are: Length over all 240 feet; length, center to center of rudder pintles, 225 feet; beam, 42 feet; beam over guards outside 62½

feet; molded depth, 19 feet. The vessels will be equipped with one turbo-generator direct current of 1000 kilowatts, and will be electrically operated. Parts of the specifications stipulate that shortly after the ferries have had their preliminary trials, they shall be inclined to ascertain the center of gravity, at least two pendulums to be used, with four inclination readings.

Seven watertight bulkheads will insure the vessels being as nearly non-sinkable as possible. Four lifeboats and eight life-rafts are included in the specifications, with high pressure fire apparatus calling for seven streams on the hurricane deck and two high pressure systems on the lower deck. These features will enable the vessels to shoot two streams 350 feet, which will make the vessels valuable, in emergencies, as fireboats. Each ferry will have accommodations for 3000 persons.

End Shipbuilding Bureau

The Seattle district office of the construction division of the Emergency Fleet corporation wound up its affairs and closed its office in April bringing to a close a splendid war achievement. The record of the Seattle district office includes 171 steel steamships and 124 wooden ships constructed in Washington and 89 steel steamships built in Oregon at a total cost of approximately \$600,000,000. The Seattle office was opened early in 1917. Latest official figures of emergency fleet construction show that Washington led all other states with 305 ships built of 2,011,000 deadweight tons.

To Have Reversing Rudder

A towboat being built for the Transmarine Corp. at the yard of the Hildebrand Dry Dock Co., South Rndont, N. Y., is to be equipped with a Kitchen reversing rudder manufactured by the McNab Co., Bridgeport, Conn. The boat will be driven by a 170 brake horsepower diesel engine supplied by the New London Ship & Engine Co., New London, Conn. The engine is to be a 6-cylinder submarine, nonreversing type. The propeller will have a diameter of 56 inches. The towboat will be 70 feet long and the rudder 62 x 77 inches.

The Cement-Gun Co., Inc., Allentown, Pa., advises that concrete coating produced in its machines was employed in resurfacing the drydock of the Chicago Shipbuilding Co., Chicago. The resurfacing itself was done by the Cement-Gun Construction Co., Chicago. This rapid method of repair is described in the April issue of MARINE REVIEW.

Is Now Fabricating Steel

The former wood shipyard of Patterson & McDonald, Seattle, is being converted into a factory to fabricate pipe and other steel equipment. The yard has been leased by the Western Pipe & Steel Co., San Francisco, which has the contract for furnishing approximately 15 miles of steel water pipe for Seattle. It is the intention to keep the plant permanently employed in steel fabrication. During the war Patterson & MacDonald constructed a number of wooden motorships, but for more than a year the yard has been idle.

Launch Motor Yacht

The motor yacht DOLPHIN was launched in April at the yard of the Newport News Shipbuilding & Dry Dock Co. and the work of completion is being pushed rapidly, the builders expecting to make delivery early in June. The DOLPHIN is the largest diesel motor yacht yet laid down, being 180 feet long, her motor power consisting of two 500-horsepower Winton diesel engines, giving her a speed better than 16 miles an hour. She is a seaworthy type of craft with liberal accommodations for owner and guests and is designed for offshore cruising, having a fuel capacity sufficient for a trip of 6000 miles.

County Officials Cited

Affairs of the defunct Pacific Norway Construction & Dry Dock Co., Everett, Wash., are still in the federal court. Recently county officials were cited by the court because they seized for taxes property of the company which had been sold by the receiver. Snohomish county claims \$12,000 in taxes for three years. The receiver realized \$18,000 from a recent sale of shipyard material and whether the taxes are payable out of this sum is a matter now under consideration by the courts.

Barge Canal Season Opens

Five fleets of five barges each left New York on May 1 when the state barge canal opened its second season under state control. Buffalo also sent away a fleet of barges. Last year about 1,250,000 tons of freight were handled over the waterway and 1922 is counted upon to set a higher record.

Grain shipped from Fort William and Port Arthur in April totaled 16,789,340 bushels moved in 69 vessels.

Radio Finds Wider Use on Sea

Wireless Development for Marine Service is
Rapidly Broadening Its Value to Ship Operators

RADIO is before the public now as never before. This is specially true of the radio telephone. Thousands of families are being attracted to the radio telephone as a means of amusement and entertainment.

While radio, in general, is considered by many to be something quite new, the steamship man who has paid the bills and thus supported the art, knows differently. Deep sea vessels for many years have been required by law to carry a radio telegraph equipment, and a large number of vessels of all classes have been voluntarily equipped. The apparatus has been improved in accordance with the technical advances achieved—from the crystal receivers and coil transmitters to the highly efficient tube apparatus. Many of the improvements have been made possible by the combined resources of the General Electric Co., the Westinghouse Electric & Mfg. Co. and the Wireless Specialty Apparatus Co. working through the Radio Corp. of America, New York.

As universally known, messages are commercially transmitted directly by means of the great high power stations, across the Atlantic, to European countries. Few realize the equally efficient operations of the volume of traffic handled by the comparatively low power ship and coast stations maintained and operated exclusively for ship working. This branch of the business has been actively developed by the Radio Corp. of America.

The United States Naval Communications service maintains certain commercial coastal stations in the United States and possessions. As a striking example of these facilities and of modern ship equipment, official records show that the American steamer *EASTERN ADMIRAL* on a voyage out of New York, around the world, lasting about nine months and ending Dec. 28, 1921, was in constant communication with a United States naval station, with the exception of eight days in the Indian ocean when signals from Manila were lost. The Annapolis, Md., station was picked up three days before reaching Port Said, and during the entire voyage, with the above exception, American press news was posted on board.

The radio offices aboard the big Atlantic liners frequently handle a heavier volume of traffic than many large city offices in a similar period. On a recent round voyage of the *White Star*



RADIO DEVELOPMENT HAS BROUGHT WIRELESS PHONES ON THE LINER AMERICA

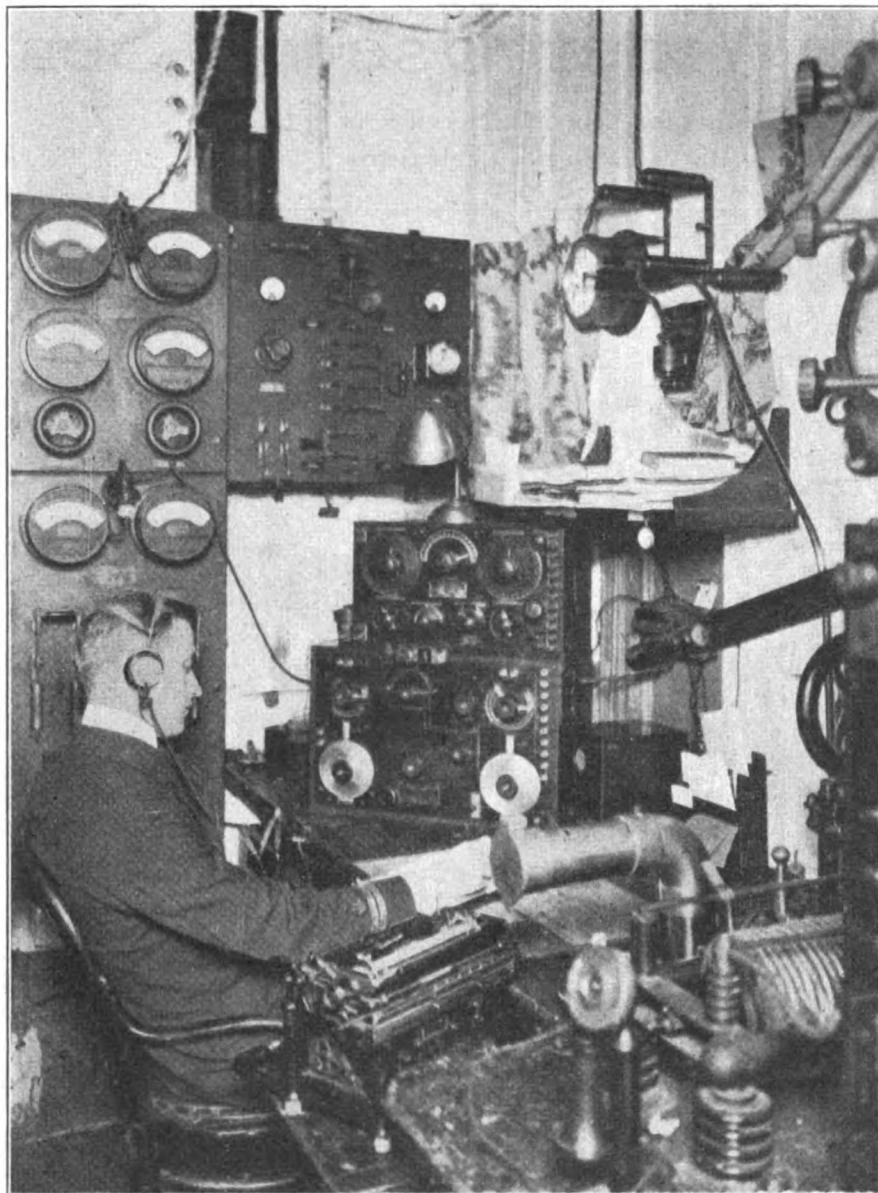
liner *OLYMPIC*, 2177 messages of a total of approximately 50,000 words were handled, in addition to service and official traffic and the press dispatches from Chatham, Mass., and English stations for publication in the daily paper printed aboard ship.

Conditions in the Pacific are particularly favorable for consistent long distance working and the Radio corporation station at San Francisco commonly communicates with ships over 3000 miles. Traffic is accepted for vessels anywhere on the Pacific. For direct or relay transmission, the steamer *CREOLE STATE*, then

in the Calcutta-Singapore-Manila service of the Pacific Mail Steamship Co., recently exchanged traffic direct with San Francisco at a distance of 5292 miles.

Important Coast Station

From the standpoint of modern equipment and consequent utility, one of the most important commercial radio stations on the Atlantic coast is located at Chatham (Cape Cod), Mass. Situated but 60 or 70 miles from Nantucket lightship where vessels "turn the corner" to approach or depart from north Atlantic ports, this station communicates



WIRELESS TELEGRAPH ROOM ON UNITED STATES LINER AMERICA

with ships of all nations. Many of the Atlantic liners transmit their American traffic to, and receive messages and American press news from, this station during the entire voyage. The liner AMERICA recently reported direct to Chatham, from Cherbourg and her captain held a telephone conversation with Deal Beach, N. J., at a distance of approximately 1600 miles.

Other coastal stations of the company at Cape May, N. J., New York (Bush Terminal), New London, Conn., and Siasconset, Mass., all work as part of an organized system which moves their traffic over private wires to the central traffic office at 64 Broad street, New York. From there, it is telephoned or delivered direct to the addressee, or if destined outside of New York, put on telegraph lines for forwarding.

Radio is also functioning for humanitarian purposes. Safety of life at sea is greatly increased. Now through a plan

put into effect by the Seamen's Church Institute, New York, and the United States public health service through the Radio corporation stations, competent medical advice is brought to the sick aboard ship. A case in point concerns a cook aboard the steamer BLOSSOM HEATH. A few weeks ago while the vessel was 950 miles southwest of San Francisco, the cook was ill and beyond medical aid or knowledge available to his shipmates. A message to San Francisco commanded instant attention at United States Marine hospital No. 19 and in 16 minutes the reply was received and the man was receiving treatment which resulted in immediate relief.

Radio as it is now developed is a vital ally of the shipping business. The steamship owner can communicate with his ship anywhere on the seven seas. He can quickly instruct and direct his ship, alter the course if necessary and

realize the saving made possible by such control over his vessel's movements. The public is finding that a water trip does not mean isolation and that the exchange of personal or business communications is always possible.

The development of radio communication is coincident with the upgrowth of the American merchant marine. Communication is vital to trade and Americans and American ships can now communicate with their home offices direct where but a short time ago it was often necessary to use foreign facilities.

Obituaries

Wallace F. Duthie, president of the Duthie Equipment Co., Seattle, died at Del Mar, Cal., April 9. He was the son of J. F. Duthie, founder and president of J. F. Duthie & Co., Seattle, steel shipbuilders. Wallace Duthie was 23 years old. When the Duthie yard completed its contracts for the Emergency Fleet corporation, Wallace Duthie organized the equipment company for dismantling the shipbuilding plant and disposing of its equipment and surplus stocks.

Capt. H. C. Thomas, for 30 years a master in north Pacific waters, died at Manila aboard his command, the express liner WENATCHEE, of the Admiral lines. The body was brought to Seattle for interment. Captain Thomas had been master of coastwise steamers of the Pacific Steamship Co. for more than two decades. Six months ago he was assigned to the Oriental route.

Com. James Douglas P. Kelley, U. S. (retired) a director of the New York Herald, died recently at his home in New York. Commander Kelley wrote several books on maritime subjects, among them *Our Navy*, *The Ship's Company*, *The Navy of the United States* and *American Yachts*. When the United States entered the world war he became censor of wireless in New York.

Charles Harrison Higbee, a prominent shipping man, retired since 1914, died at Berkeley, Cal., late in March. He had been for some years vice president and general manager of the former Pacific Coast Steamship Co.

Herbert S. Miller, president of the Lake Torpedo Co., Bridgeport, Conn., died recently in a hospital at Elizabeth, N. J., after an operation for appendicitis, aged 48 years.

H. E. Wright, a director of the Royal Mail Steam Packet Co., died suddenly May 3 at his home in England.

Fifty per cent of the cotton export trade of the Gulf of Mexico is being carried in American ships this year as against 15 per cent a year ago.

Underwriters Change Tax Basis

Take Advantage of Model Law To Do Business in District of Columbia—
Companies May Establish New Marine Insurance Center at Capital

DOMESTIC marine insurance offices have not been slow to act following the fixture of President Harding's signature to the Edmonds model marine insurance bill for the District of Columbia, and a large number of underwriters have hastened to apply to the insurance commissioner of the District for a license to transact business there. Under the provisions of the bill, companies in the District are to be taxed upon a basis of net profits instead of gross premiums, which is the system generally being used in all of the states. It is predicted in underwriting circles that if some of the states which have a similar bill under consideration do not pass it, Washington will become the center of a large marine insurance community.

Beside the outside domestic insurance companies that are seeking admittance to the District, it is expected the capital will soon have its own flock of new marine insurance companies which will be organized under the new law. Already two companies are reported to be undergoing the process of formation at Washington, one to write direct and the other a reinsurance business.

Agitation for relief in taxation has been carried on in New York and other states for several years but the efforts of the underwriters have met with small success so that the opportunity afforded them by the enactment of the Edmonds bill is a welcome one. Unless New York legislators adopt a similar bill which will lift the burden from the shoulders of local marine insurance offices its supremacy as an underwriting center seriously will be threatened, underwriters believe. The establishing of offices in the District of Columbia undoubtedly will cause much of the business that has heretofore been handled in New York to be written in the District. There are indications, however, that a bill modifying the system of taxation in New York will be introduced with the approval of the New York superintendent of insurance, such a measure having been urged by the American Institute of Marine Underwriters and placed before the superintendent but not carried to Albany because the time was too limited for him to study the details of the plan.

Some of the other provisions in the

model marine insurance bill to aid domestic marine insurance companies and passed as an example of legislation to aid the business, include the establishment of multiple insurance allowing American companies to transact all kinds of insurance with the exception of life, surety and bonding; the enlargement of reinsurance facilities to permit direct writing companies to exchange business with other companies meeting the proper standards of solvency and the removal of existing limitations on the financial powers of companies which hamper operations in foreign fields.

View Tariff Unfavorably

NEW YORK marine underwriters do not look with favor upon the new Fordney tariff measure as their business is wholly dependent upon ocean commerce and anything that interferes with it is reflected in the volume of marine insurance written. The measure, they fear, greatly will restrict imports to this country.

Syndicates' Showing Good

A GOOD underwriting exhibit is shown in the first report of the American Marine Insurance Syndicates covering the 20 months during which the syndicates have been in operation. Syndicate B which was organized for the purpose of handling marine insurance on the vessels of the United States shipping board showed a credit balance of \$477,067, premiums having amounted to \$1,459,042 and losses paid and outstanding of \$141,517. The report states that these figures, however, do not show a representative year.

Only 60 ships were insured by the syndicate and it was fortunate in sustaining no serious loss and comparatively few claims of any size. Syndicate C, a pool formed for the writing of privately owned steel ships, showed a credit balance of \$1,251,597. Losses paid and outstanding were \$1,911,990 on a total premium income of \$8,372,389. In explaining the showing of this syndicate the report states that it must be remembered that at the beginning of its operations the syndicate received the benefit of high rates and values with a falling market in the cost of repairs. Values have fallen to a low basis, the report says,

and competition has driven rates far down the scale so that no such satisfactory showing is expected for the future.

* * *

Jobless Risks Opposed

AERICAN marine insurance companies are not enthusiastic over a suggestion made recently by a British company that ship masters be granted a form of unemployment insurance when disqualified for service because of an accident. The suggestion in some quarters is strongly opposed on the grounds that such a form of insurance would increase the moral hazard of ocean hull and cargo underwriting. The plan put forward by the British company would limit the amount written to \$4000 for each individual but American underwriters fear that if such a coverage becomes general some companies would write larger amounts. With the guarantee that their actions were protected by insurance against personal financial loss certain unscrupulous masters might deliberately try to defraud the insurance companies as some of the Greek, other European and even some American masters have done during the past few years. Such insurance is not likely to find support among American assurers for some time to come.

* * *

Represents Marine Field

SAMUEL D. McCOOMB, one of the most prominent American underwriters and manager of the Marine Office of America, has been appointed national councillor to represent the association of marine underwriters of the United States in the chamber of commerce of the United States.

* * *

Shows Hague Rules Merit

A PLEA for the Hague rules which provide for a uniform bill of lading was made before the Foreign Trade club of Baltimore by Charles S. Haight, chairman of the bill of lading committee of the international chamber of commerce last month. Mr. Haight who has won the support of many underwriters to the cause of a standard bill of lading, pointed out how the rules would tend to reduce pilferage losses by shifting the responsibility to the carriers. Mr. Haight

declared the Hague rules definitely define three points: the carriers liability increased to 100 pounds per package, 12 months allowed to fill a claim or a lawsuit, and the burden of proof for pilferage shifted to the carrier. He stated that one New York marine underwriting firm had informed him that on one particular line it had increased the pilferage rate from 12½ cents to \$2 on account of the heavy pilfering on the line's vessels.

* * *

Cuts Rate on Pilferage

ALTHOUGH theft and pilferage business is not written by a number of offices because it is not considered desirable business, one office on Beaver street, New York, has started to write this form of coverage at a reduced rate much to the discontent of old and cautious offices who charge the firm with cutting rates to grab premiums regardless of cost. Companies that have not stopped writing theft and pilferage business report they are losing many accounts to the firm. Underwriters report there was some improvement in theft and pilferage claims in April but that the reduction in losses in no way justifies the rate cut.

* * *

See Deck Loads Decision

UNDERWRITERS are expectant that some international agreement as regards deck loads will result from the recent Hague conferences at which a special committee was appointed to investigate and prepare a report. Badly stowed and too heavy deck loads have been the source of many claims and insurance underwriters generally would welcome any agreement which would reduce the hazard. British vessels trading to or from British ports are at present subject to certain restrictions, which, however, do not affect ships under English registry trading in foreign waters.

* * *

Shelve Foreign Tax Bill

STRONG opposition to a bill passed by both houses of the New York legislature has resulted in the shelving of the measure which would have placed a tax of 1 per cent upon all business placed with foreign unadmitted underwriters. Beside not winning the approval of the insurance department officials it has been attacked by the Merchants association of New York, which body, while favoring the removal of the present disparity, contends the bill passed at Albany provides an excessive tax in view of the fact that the levy

was to have been made upon the amount of the policy instead of the premium.

* * *

Against American Plan

PESSIMISM as to the future of American marine insurance unless foreign carriers are permitted to operate without restrictions in the United States is expressed in an article published in *Fairplay*, London, which believes that matters are coming to a head in connection with the operations of unlicensed unadmitted foreign underwriters in New York. The British paper expresses the view that the superintendent of insurance is determined to close as effectively as possible the channels of negotiation and writing of insurance in the state by or for unauthorized insurers. It says that marine insurance interests themselves are in favor of the licensing of brokers to negotiate insurance with unauthorized insurers practically without restriction. "Surely," *Fairplay* comments, "the state department does not pretend that Lloyds underwriters are, or can be, under any circumstances subject to its jurisdiction. American assureds can be compelled to abstain from insuring with Lloyds underwriters but the suggestion that foreign underwriters should submit themselves to irritating and irrational regulations and taxes is ridiculous."

* * *

Customs Rule Hits Risks

RECENTLY the United States custom's bureau ruled no refund in duty will be made to an importer who claims a shortage unless he can prove that the missing merchandise has not been smuggled into the country. This rule is being studied by marine underwriters several of whom are revising the duty feature of their old contracts and are refusing to accept the risk of loss of duty on new contracts unless an additional premium is paid to provide for the increased risk involved. Under the new ruling it will be practically impossible for importers to furnish proof that goods missing from public stores or piers have not found their way into this country. Marine insurance companies formerly charged one-third of the marine rate for duty but in view of the recent order from Washington there will no doubt be a considerable change in the methods of handling this kind of business.

...

An unusual shipment was made recently on the steamer *WEST MAHWAH* from Portland, Oreg., when a factory-cut house was loaded for delivery in New Zealand.

More Underwriters Quit

SMALLER companies writing marine insurance continue to find the pace too fast and several more have made arrangements to drop out of the field. Two more companies have decided to give up writing ocean marine insurance, the *Rossia Insurance Co.*, of America, because of its heavy reinsurance loss ratio, and the *New Jersey Fire Insurance Co.*, as soon as it can terminate its present pool arrangement with the *Baltic Insurance Co.* The *Rossia* is a Hartford company which wrote direct marine insurance for a short time but some months ago started reinsurance exclusively. The company had a loss ratio of 102 per cent. The *New Jersey Fire* had a loss ratio in 1920 of 99 per cent.

Hauling Cane Between Ports Adds to Revenue

Steamers in the South American trade have increased their revenue production through transporting native bamboo, or guayaquil canes, from points in Ecuador to other ports in South America, according to Capt. S. Olsen of the *New Orleans & South American Steamship Co.* Vessels plying between South American ports are now engaged from time to time in taking coastwise cargoes of these canes which owing to their lightness can easily be carried on deck. The custom had been to charter small native steamers to make these coastwise trips.

A considerable volume of this business is done between Callao, Guayaquil and Lima. New channels of trade with the United States may also be opened. The canes are the familiar type of bamboo which grow wild in the swampy ground along the Guayas and other rivers of Ecuador. They are cut in lengths of about 30 feet and range from 3 to 6 inches in diameter. They are durable and used for building purposes.

The United States line has announced the appointment on each vessel of its fleet of a registered nurse. In the past it has been customary to detail a stewardess to act as a nurse and to aid the ship's surgeon, but the United States line is establishing a precedent in its new appointments. All of the nurses selected have been trained in big hospitals, and practically every one of them had experience as army nurse during the world war. Nurses already have been appointed aboard the steamship *GEORGE WASHINGTON* and the steamship *AMERICA*.

Steel Manufacturers Utilize Great Inland Waterway

BY W. H. LLOYD

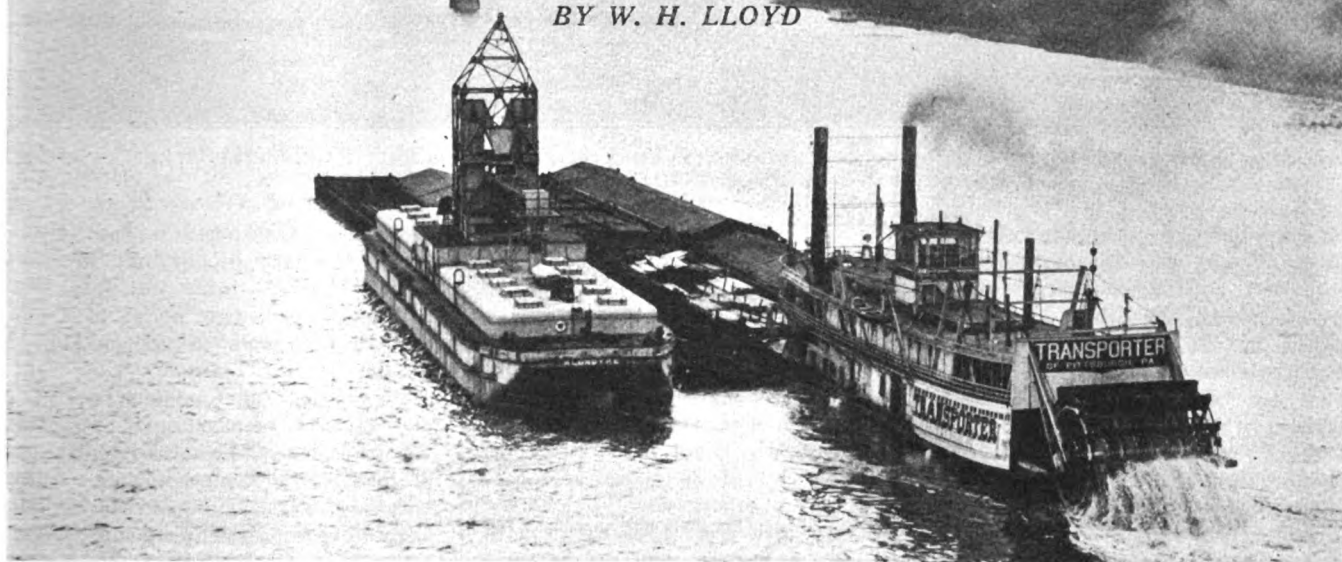


Fig. 1—Steamer TRANSPORTER Towing First Shipment of Steel Out of Pittsburgh in 10 Years. It Left Pittsburgh Oct. 27, 1921

ACHIEVEMENTS of the past six months in connection with the revival of iron and steel transportation on the Monongahela, Ohio and Mississippi rivers point toward the consummation of a plan which steel producers of the Pittsburgh and Wheeling areas have had in mind for some time. This plan was born of their desire properly to serve their customers in the South, West, and Southwest, and effectively to compete there with steel producers of Illinois, Colorado and elsewhere. This desire was more or less throttled and hampered by the high all-rail freight rates prevailing since the war. That great progress has been made in a relatively short time is evidenced by the fact that since Oct. 27, 1921, when the first two shipments comprising 4000 tons of steel products left Pittsburgh, more than 1000 freight carloads of steel produced in that center have been shipped by river barge to such destinations as Huntington, W. Va., Louisville, Evansville, Ind., St. Louis, and Memphis, and in many cases transshipped by rail to inland points in Oklahoma, New Mexico and Texas.

Visualized by the Jones & Laughlin Steel Co., the possibilities of transportation of steel by water out of Pittsburgh only is beginning to be realized and to say that Pittsburgh in the future will rank as an ocean port

is not far fetched nor impracticable. This company has just accomplished something unique in the annals of inland waterways shipment. On April 3 it shipped 6000 tons of steel in eight of the steel barges of its subsidiary, the Vesta Coal Co., which were built in its own shipyard and towed by the Vesta company's steamer, the ALIQUIPPA. The tow arrived at Cairo, Ill., where the Ohio joins the Mississippi, in exactly seven days. It is approximately 1000 miles from Pittsburgh, by water. On the way down barges were dropped off at Louisville, Ky., and Evansville, Ind. A portion of this shipment, comprising several thousand tons, then was conveyed up the Mississippi to St. Louis, arriving three days later and from that point was transshipped to railroads for final delivery. This 10-day delivery to St. Louis from Pittsburgh compares favorably with delivery by rail. Several barges were taken to Memphis for similar distribution.

To tell the story of what has been done is to cite a tale of accomplishment in the face of hardships, discouragements and difficulties, all of which have served as a spur to further effort. Despite attention given minutely to the weather, river stages, etc., by means of daily bulletins issued by the department of commerce, a sample of which is reproduced herewith, consid-

erable difficulty has been encountered in the way of bad weather, foggy atmosphere, low water, or something of the kind. Poor terminal facilities have been found at Cincinnati and other points as well as antiquated loading and unloading machinery at other terminals. Chambers of commerce, trade organizations and other civic bodies, however, now are at work looking toward improvements along these lines so that many such difficulties shortly may be overcome.

Perhaps the greatest hindrance to the highest commercial development of the present plan is the incomplete canalization of the Ohio river and the low stage of the water at the lower end of the stream during the summer months. However, it is pointed out, that United States army engineers estimate that to complete the canalization of the Ohio, opening up a great 2000-mile inland water highway from Pittsburgh to the Gulf of Mexico, would call for the expenditure of but \$35,000,000 or \$5,000,000 less than the cost of one battleship of the U. S. S. MARYLAND type.

The April tow of the Jones & Laughlin company was its fourth since the history-making shipment of Oct. 27, 1921, which was the first consignment of steel to go down the river in 10 years. The initial shipment comprised 4000 tons in four 200-foot steel barges

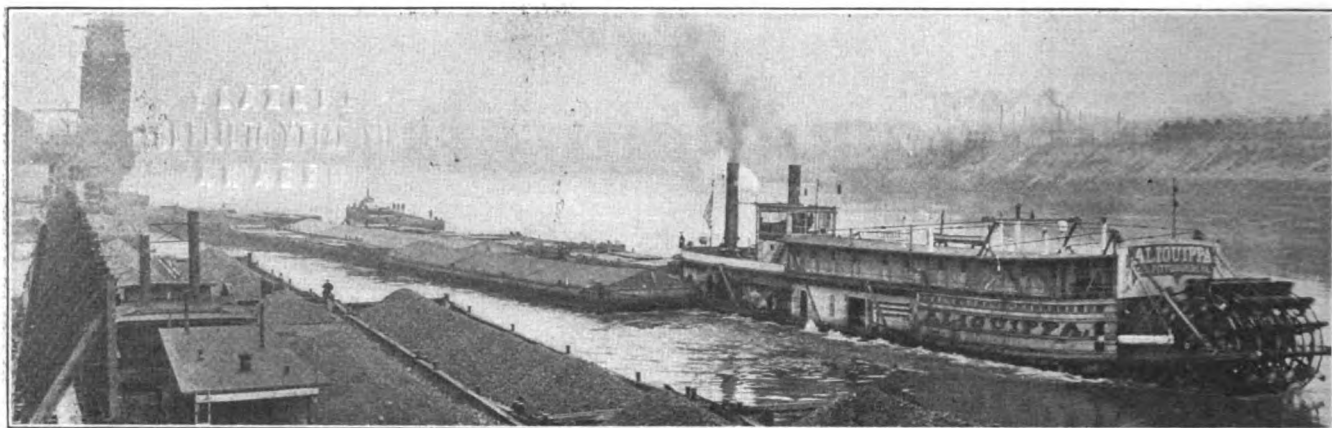


FIG. 2—DEPARTURE FROM PITTSBURGH WHARF OF RECENT TOW OF EIGHT BARGES LOADED WITH STEEL PRODUCTS FROM PITTSBURGH MILLS

for the Jones & Laughlin Steel Co., three 150-foot steel barges also loaded with steel, and two flat barges of coal. It was towed by the **TRANSPORTER**, owned by the Water Transport Co., Inc., organized under the laws of Delaware but with headquarters in the Wabash building, Pittsburgh. This company just completed its fourth tow and began collecting tonnage for its fifth to leave Pittsburgh early in May. It will include two barges of structural steel from the McClintic-Marshall Co., Pittsburgh, for delivery at Portsmouth, O., two barges for the National Supply Co. to Memphis, Tenn., and a barge from the Wheeling Steel Corp., also for Memphis delivery. The Water Transport Co. likewise owns two smaller steamers, the **CONVOY** which usually carries coal between Moundsville and Parkersburg, W. Va., and the **OLD RELIABLE** utilized in the transportation of gasoline from Sistersville, W. Va., to Pittsburgh for the Atlantic Refining Co. Those interested in the Water Transport Co. have been engaged for the past seven years in this work but only the last two as the Water Transport Co.

On this first trip, the **TRANSPORTER** dropped one barge at Huntington, two at Louisville, and three at Evansville. An additional barge, the **KLONDIKE**, built by the Marietta Mfg. Co., for the Aluminum Ore Co., was taken in tow at Huntington and delivered to the ore company at Cairo, Ill. Included in this shipment was a barge containing between 500 and 600 tons of nails which were unloaded at the dock of the Aluminum Ore Co. for the Simons Hardware Co., St. Louis.

Owens Fleet of Barges

In addition to the three steamers, the Water Transport Co. owns a fleet of 20 barges, 12 steel and eight wooden. Eight of the steel barges are 36 x 200 feet and of 1500-ton capacity; four are 25 feet shorter and of 1000-ton capacity and all are built with water

Valley Is Important

SOME idea of the importance of the Mississippi river valley from a bulk freight producing standpoint may be gleaned from the following statistics:

The Mississippi river valley includes all of 22 states and part of seven others.

Its area is 1,725,000 square miles or 64 per cent of the total area of the United States.

In it approximately 65,000,000 people or 55 per cent of the population of the United States live.

Seventy per cent of the nation's agricultural products, including live stock, come from it.

Forty-four per cent of the country's manufactured goods are produced in it.

Seventy-five per cent of the lumber and forest products of the United States are found in it.

Sixty per cent of its mines and 70 per cent of its petroleum are located in it.

tight compartments and collision bulkheads. Many are equipped with steel hatches to protect freight. The wooden barges have capacity as follows: Six are 400-ton, and one is 500-ton and one is 200-ton. Additions to this equipment are contemplated and engineers now are engaged in designing a number of improved barges. The barges as well as the steamers are chartered at a per diem rate by the steel producers.

Improvements to barge and steamer equipment now contemplated, presage the shipment of steel at an early date direct from Pittsburgh to points on the Gulf of Mexico, as well as into Central America without re-loading, and finally through the Panama canal to Pacific coast ports. So far

the Water Transport Co. has not extended its activity beyond Memphis since deliveries from Pittsburgh to that and intermediate points have kept its present equipment active. Officers of the Water Transport Co., Inc., are: Charles T. Campbell, president and general manager; H. B. Mish, vice president, who also is president of the General Contracting Co., Pittsburgh; J. H. Gilmore, treasurer, who also is vice president of the General Contracting Co., and H. S. Stuckeman, secretary and assistant treasurer.

Large Tonnages Shipped

The second tow handled by the Water Transport Co. left Pittsburgh Dec. 5 and also was participated in by the Jones & Laughlin Steel Co. to the extent of about 4000 tons. Two barges each likewise were towed for the American Steel & Wire Co., the Pittsburgh Steel Co., and the National Tube Co. Two of these barges were delivered in St. Louis nine days after leaving Pittsburgh, beating the initial shipment to St. Louis by one day. The **TRANSPORTER** this time convoyed the tow to Louisville, St. Louis, and Memphis, then back to St. Louis, and returned to Memphis before returning to Pittsburgh.

An even larger tonnage was shipped in the Transport company's third tow.

This left Pittsburgh Feb. 13, reached Memphis Feb. 25 and the empty barges were returned to Pittsburgh on March 13. This shipment comprised 10,300 tons, made up of four barges each for the Pittsburgh Steel Co., and the American Steel & Wire Co., and two for the Wheeling Steel Corp., two barges being dropped off at Louisville, the remainder going to Memphis.

Considerable improvement in time is noted in the record made in connection with the Transport company's latest shipment since only seven days were required to reach Memphis, as against approximately two weeks for

the first trip. About 600 tons in six barges left Pittsburgh the morning of March 31 and on Thursday, April 6, the major portion, about two-thirds of the shipment, was in Memphis, the other barges having been dropped at Portsmouth for the McClintic-Marshall Co. On its return, the steamer picked up three barges of steel from the Whitaker-Glessner Co., Portsmouth, for delivery to the Parkersburg Iron & Steel Co., Parkersburg, W. Va. So far this is practically the only effort made to carry freight on the return trip. So much time is required going up the river against the current when loaded that the development of this portion of the service is being left to the future. To date it has been desirable to return to Pittsburgh as soon as possible to prepare for the next journey.

Means Sizable Freight Saving

In connection with the economies that are being effected through this barge service, it is pointed out that it costs a Pittsburgh nail producer \$16.40 per ton to move a carload of nails from Pittsburgh to Shreveport, La., by an all-rail route. By barging by river in the manner described it costs \$5 a ton to move the same material to the same point. Down-river customers of steel producers who are delivering their products by barges are saved on an average, \$2 or \$2.50 per ton. As an example, on a shipment of 8000 tons, it was estimated that \$20,000 was saved over the equivalent all-rail

STATIONS.	Flood stage	Height of river.	Change.	Precipitation.	Weather
WARREN	12	2.0 f	-0.2	.00	Clear
FRANKLIN	11	2.8 f	-0.2	.00	Clear
CLARKE	12	2.5 s	0.0	.00	Clear
PARKER	15	3.0 f	-0.4	.00	Clear
JOHNSTOWN	15	1.7 s	0.0	.00	Clear
SALTSBURG	8	1.1 f	-0.1	.00	Clear
FREEDPORT	22	5.3 f	-0.2	.00	Clear
CONFERGUE	10	1.1 f	-0.2	.00	Clear
WEST NEWTON	20	1.2 s	-0.1	.00	Cloudy
ROWLESBURG	12				
LOCK No. 15	22	8.4 s	0.0	.00	Clear
LOCK No. 10	25	9.2 f	+0.1	.00	Cloudy
LOCK No. 7	30	11.7 s	0.0	.00	Cloudy
LOCK No. 4	31	14.4 f	-0.1	.00	Clear
PITTSBURGH	22	5.2 f	-0.5	.00	Clear
DAVIS ISLAND	25	10.0 f	-0.5	.00	Clear
DAM No. 2	26	9.2 s	0.0	.00	Clear
BEAVER FALLS	11	4.3 f	-0.1	.00	Clear
BEAVER DAM	30	9.1 f	-0.5	.00	Clear
DAM No. 9		9.0 f	-0.6	.00	
DAM No. 12	35	7.2 s	0.0	.00	Clear
DAM No. 13	43	8.6 s	+1.6		
PARKERSBURG	35	10.9 f	+3.3	.00	Cloudy
PT. PLEASANT	40	5.1 f	-5.9	.00	Clear
DAM No. 26					
PORTSMOUTH	50	16.2 f	-2.5	.12	Cloudy
CINCINNATI	52	26.7 f	+2.5	.01	Cloudy
LOUISVILLE	28	10.8 f	-0.5	.00	Cloudy
CAIRO	45	52.7 f	-0.4	.00	Cloudy

Wickets up.
The rivers will change but little.

FIG. 3—SAMPLE BULLETIN ISSUED DAILY TO RIVER SHIPPERS

freight rates, to say nothing of the increased speed in delivery.

Counting loading and unloading charges or the cost of delivering steel

from warehouse to warehouse by barge, a saving of 30 per cent and in some cases 40 per cent, it is said, is effected. The net result of the inauguration of this river transportation service is to bring Pittsburgh at least 400 miles nearer the Gulf of Mexico.

Indicative of what has been accomplished by one company in the six months that steel products, including pipe, wire, nails, woven wire fencing, structural material, bars, tin plate, sheet bars, billets and slabs, have been shipped out of Pittsburgh by water, the Jones & Laughlin company has moved in this fashion in that period, a total of approximately 15,000 tons. Its May tow now is in course of preparation and will probably increase this total to 20,000 tons. The ALIQUIPPA is scheduled to take this tow.

Buys River Barge Fleet

One of the latest entrants into the river transportation field is the Lent Traffic Co., headed by Capt. John F. Lent. This company, which shortly is to be reorganized as the Public Utility Wharf Co., recently purchased the steamer JAMES MOREN, which is scheduled to leave Pittsburgh on its first trip for New Orleans and intermediate points some time in May with a cargo of manufactured steel products.

The Lent Traffic Co. recently bought the Mississippi river barge fleet of the United States Sugar Products Corp. and is equipped to handle all classes of freight if terminal facilities can be ac-

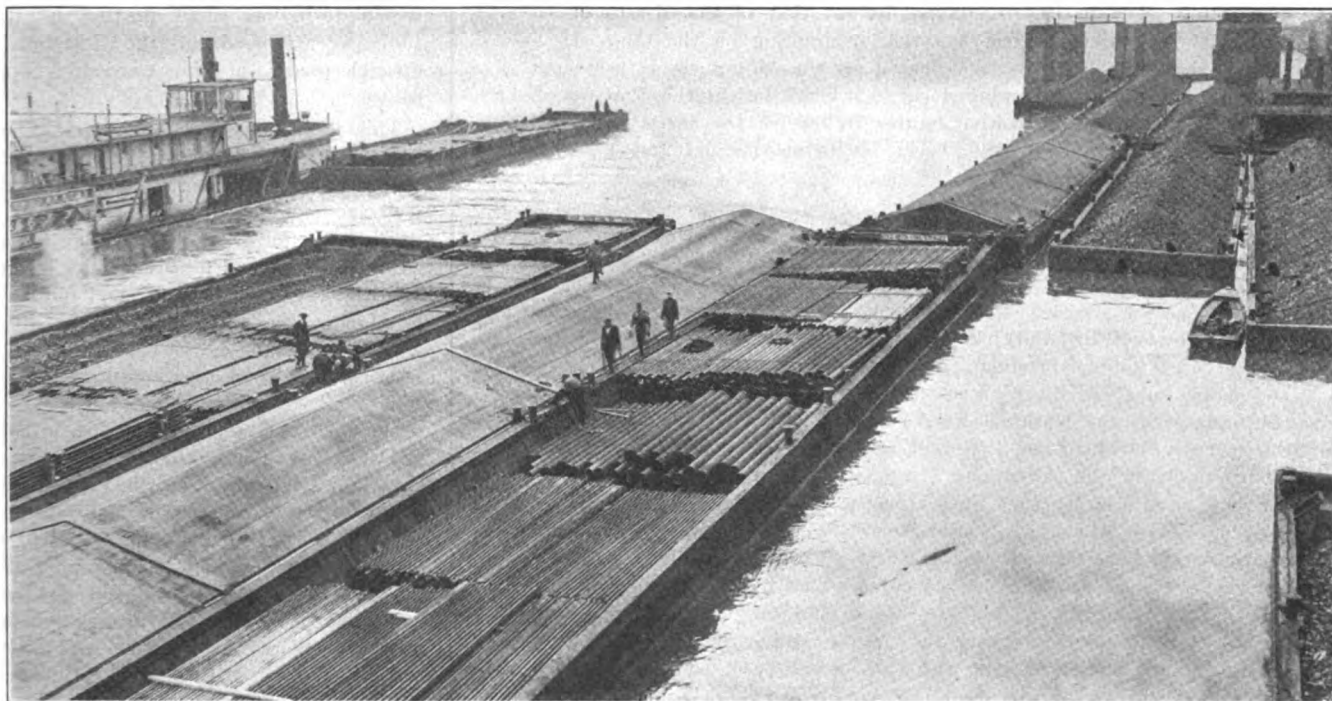


FIG. 4—ASSEMBLING BARGES OF PIPE AND OTHER STEEL PRODUCTS AT PITTSBURGH FOR SHIPMENT DOWN THE MISSISSIPPI RIVER

quired in Pittsburgh. To that end, it is negotiating with the Inland Rivers Wharf Co. for the lease of the Exposition building property in Pittsburgh, now owned by the city. River interests are understood to be in favor of this proposition. According to Captain Lent, arrangements have been made at New Orleans for the re-shipment on gulf barges for points in Texas and also on ocean-going vessels for delivery through the Panama canal to South American and Pacific coast cities. Arrangements likewise have been completed with southern railroads for re-shipment to interior points from river unloading docks.

Makes Record Run

The LaBelle Transportation Co. has been active on the Ohio river, plying between ports of subsidiaries of the Wheeling Steel Corp. Its steamer, the LA BELLE, recently arrived at the Martins Ferry plant, Wheeling, after a record breaking run from Portsmouth, with a tow of four steel barges, loaded with 1500 tons of sheet bars and one flat barge of fuel. It made the distance of 267 miles upstream in 64 hours running time.

For some time past the Carnegie Steel Co. has operated a constantly growing fleet of barges on the rivers mainly for the transportation of fuel.

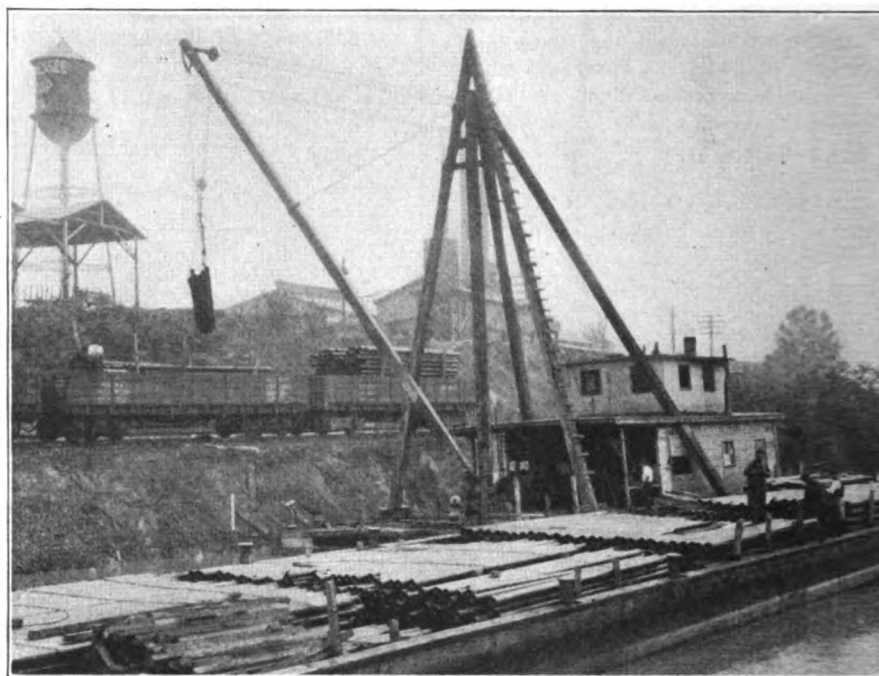


FIG. 5—UNLOADING PIPE AT MEMPHIS

Its river transportation department is in direct and complete charge of Capt. A. O. Ackard, with headquarters in the Frick building annex. He now commands a fleet of 165 barges and 10 steamers. Two additional steamers now are in the course of construction and details for improved barges are

being worked which strongly indicate the possibility of the Carnegie company's engaging in the delivery of steel by river. This now is being discussed to the end that whatever is done will in no way conflict with the operations of its Birmingham, Illinois and Indiana constituents of the United States Steel Corp.

While the Birmingham plant produces rails, plates, etc., and already is shipping steel via barge to New Orleans and Mobile for shipment abroad, that plant does not produce hoops and bands, cotton ties, etc., which form no small portion of the tonnage produced in the Pittsburgh district plants of the Carnegie company.

This problem is now being approached from all angles but it is believed 1922 will find the Carnegie Steel Co. as well as the independent steel producers of the Pittsburgh and Wheeling areas shipping more and more steel by barge. In this way the iron and steel industry is blazing the trail out of the high freight rate tangle.

At a recent meeting of the Mississippi Valley association in Kansas City resolutions were adopted favoring prompt and adequate appropriations by congress for the early survey of the Lake Erie and Ohio river canal routes, also calling on the senate to pass the \$42,800,000 rivers and harbors bill already approved by the house and favoring sufficient annual appropriations to secure within the next five years the provision of a nation-wide, connected internal waterway system and improved harbors, including the proposed Lake Erie and Ohio river canal.

Rivers Out of Pittsburgh Carry Much Tonnage

FROM a tonnage transportation standpoint, the Monongahela river ranks first in the world. Maj. J. Franklin Bell, United States engineer in the Pittsburgh district, recently stated that the tonnage originating on it in 1920 surpassed by far that of the Mississippi river and was five times greater than that originating on the Ohio. He said further that "the 1920 tonnage floated on the Monongahela represents a bulk greater than the combined cargoes carried over the Panama, Suez and Kiel canals." Comparative figures follow for the three rivers of the Pittsburgh district for 1921, a year far below normal and 1920 which was a record breaker.

		Tonnage carried	Value	Passengers carried
Monongahela	1921	16,100,824	\$834,325.03	10,788
	1920	24,264,354	1,991,403.61	16,044
Allegheny	1921	3,737,441	170,721.75	840
	1920	4,948,276	274,707.74	1,374
Ohio	1921	2,840,998	194,497.96	120,462
	1920	4,733,620	573,846.67	104,632

"If, however, Pittsburgh and vicinity is to maintain its unique position as 'the greatest tonnage producing district in the world' the system of locks and dams on these three rivers must be pushed to completion," stated the findings of the National Rivers and Harbors Congress at Washington recently. "The Lake Erie and Ohio river canal must soon be built; obstructions on the Allegheny river must be removed so that its improvement can be carried out; and the Youghiogheny should be improved. This calls for appropriations by congress and these appropriations will be contained in the rivers and harbors bills, which require the support of senators and representatives as well as public sentiment."

In this connection it may be noted that on March 29, action was taken in the house increasing the appropriation for the improvements of rivers and harbors during the next fiscal year, from \$27,500,000 to \$42,815,000. Much of this doubtless will be spent in the Monongahela, Allegheny, Ohio and Mississippi river valleys.

Late Decisions in Maritime Law

Legal Tips for Ship Owners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

IF UNSEAWORTHINESS of a ship was a contributing cause of injury to seamen, without which it probably would not have happened, it makes no difference in the owner's liability that the negligence of members of the crew developed this unseaworthiness into action, and made it destructive when it would otherwise have been harmless.—Patton-Tully Transportation Co. v. Turner, 269 *Federal Reporter* 334.

Where a ship contracts with a shipbuilding company for repairs, it assumes the obligation to keep all parts of the ship under its control reasonably safe for the employees of the shipbuilding company, and it can not relieve itself of the duty by delegating it to a ship-ping company which is discharging the cargo.—OMSK, 266 *Federal Reporter* 203.

A salvage award of \$10,000 was sustained by the court in the case of FERM, 268 *Federal Reporter* 518, where it appeared that the salvage vessel was wholly unable to move under her own power and was permanently and completely disabled, that she could never have reached a port without being taken in by some other vessel or vessels, that the flooding of her engines and the disabled condition of her steering apparatus made her handling peculiarly difficult, and that the aggregate value of vessel, cargo, and freight was in excess of \$277,000.

It was held in the case of MACONA, 269 *Federal Reporter* 468, that seamen of a vessel which stranded before the voyage was terminated, but which had not been abandoned, are not entitled to salvage for services in getting the vessel afloat which were arduous and more exacting than the usual work at sea, but which entailed no hardships, and required no labor outside of usual working hours, except that which was paid for as overtime. In making the decision the court said: "A seaman's work is not capable of nice definition, and is notoriously irregular in its demands upon him. When he signs the articles, he accepts obligations which in the long history of the sea have always subjected him to periods of intense, and at times protracted and exhausting, labor, as at other times they permit him long periods of relative ease, at least in modern times. It will not, I think, tend to improve the conditions of his employment to try exactly to parcel out just when his work as seaman ends; certainly it will make difficult that discipline which at sea, if anywhere, must remain a condition of safety. To make an award in the case at bar I

must hold that, whenever a ship is upon a strand, the duties of the crew are at an end, and that they are not obliged, by virtue of their duties as such, to do their utmost to lighten her, so that she may proceed upon her voyage."

Where a tug was unable to complete a trip before night, and moored the barge she was towing in a sheltered spot, and proceeded on its way, intending to return in the morning, there was no negligence, it was decided in the case of WINTHROP, 269 *Federal Reporter* 580, rendering the tug liable for the loss of the barge's anchor, when an ice floe unexpectedly swept it from its mooring during the night.

A derrick boat, used in loading logs upon the deck of barges by which the logs were transported in interstate commerce, the machinery being of the type commonly found upon permanent wharfs, was a vessel within the meaning of the limited liability statute, and a suit for limitation of the owner's liability for explosion of the boiler used to operate the derrick was within admiralty jurisdiction. The duty to use reasonable care in keeping a ship and her appliances in safe condition is a continuing duty resting upon the owners during the voyage; this duty is nondelegable, and for injuries resulting from its breach the owners are liable to the seamen, even if there is an entire lack of that privity or knowledge which will deny to the owners the right to limit their liability.—Patton-Tully Transportation Co. v. Turner, 269 *Federal Reporter* 334.

Where a barge, which was being dragged out to sea in ice with the ebb tide, brought up on Sandy Hook near the turn of the tide, and, though there was no great immediate danger, the captain hoisted a distress signal, a tug, which pulled the barge off shore and took her to the anchorage off Staten Island, it was held in the case of Potter v. Payne, 269 *Federal Reporter* 470, rendered a salvage service, rather than a mere towage service, and was entitled to an award of \$1500, though the difficulties encountered were no more than she would have undertaken in towing a schooner up the harbor at the same time.

Demurrage is defined in the case of Earn Line Steamship Co. v. Manati Sugar Co., 269 *Federal Reporter* 774, as the sum agreed to be paid to the ship for delay caused without her fault. Demurrage days as usually understood, it was said, do not begin to run until the

lay days have been used up. "If the discharge of cargo uses all the lay days, or more than the lay days, then the days of delay at the port of call are to be counted as demurrage days. This is what demurrage usually means, viz., the amount agreed to be paid for the prolongation of the voyage by delay in loading or discharging cargo." It was then held that demurrage is not imposed on a charterer for delay at port of call, where thereafter the vessel was discharged before the expiration of the lay days, though the charter provided that delay at port of call should be counted as demurrage days, since that provision will be construed only to charge such demurrage in case thereafter the vessel is not unloaded within the lay days.

"No man is infallible, and there are certain errors of judgment for which the law does not hold a person liable; but he is liable for an error of judgment which a careful and prudent navigator would not have made."—OLD RELIABLE, 269 *Federal Reporter* 725.

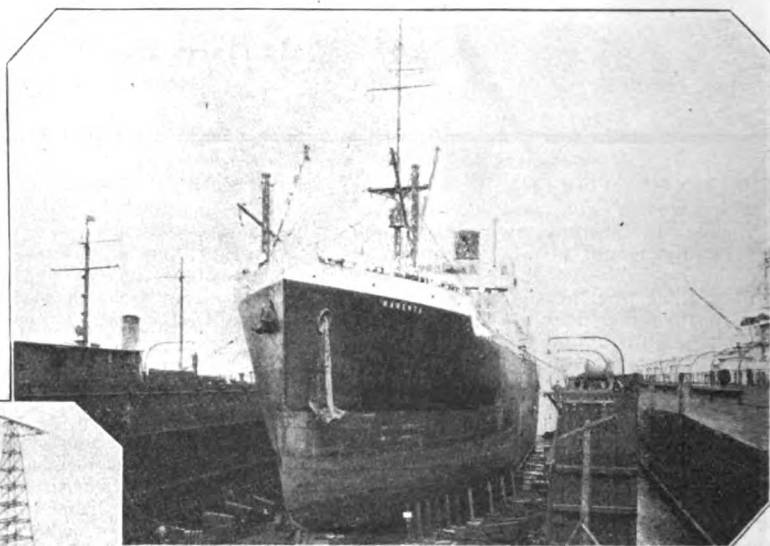
The term "inevitable accident," applied to collision cases, means an accident which both parties have endeavored to prevent, by every means in their power, with due care and caution, and a proper display of nautical skill. It is not "inevitable accident," it was held in OLD RELIABLE, 269 *Federal Reporter* 725, where a master proceeds carelessly, and afterwards circumstances arise when it is too late and impossible for him to do what is fit and proper to be done.

"When the consignee depends upon an independent contractor to furnish a berth for him, or when he uses a public dock, the duty rests upon the consignee to see that proper warning is given as to the way in which the berth should be used, if the consignee has been in the habit of using that particular berth, so as to be familiar with its general condition. **** in addition, if the consignee was not bound to give warning, or to take any particular care of the boat at the dock, then his reliance upon the maintenance of the public berth by the city is the reason why he goes to no trouble himself and assumes that the berth is safe. Under these circumstances he is responsible for the care of the vessel which is placed by him in the berth, and he in turn must look to the parties maintaining the public berth for which he pays hire, if they do not furnish him with a safe berth."—M. & J. Tracy, Inc., v. Marks Lissberger & Son, Inc., 269 *Federal Reporter* 662.

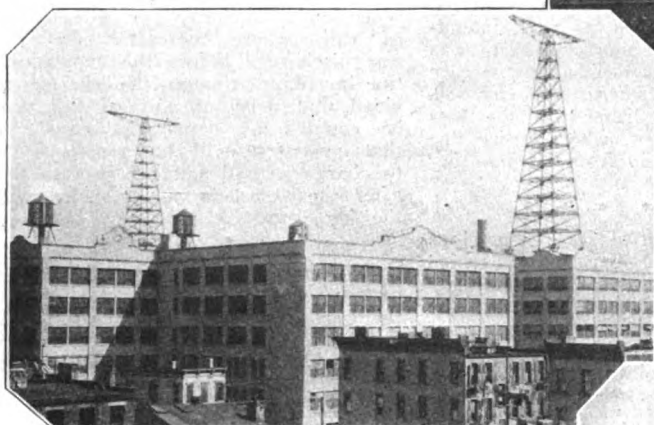
Photographs from Far and Near



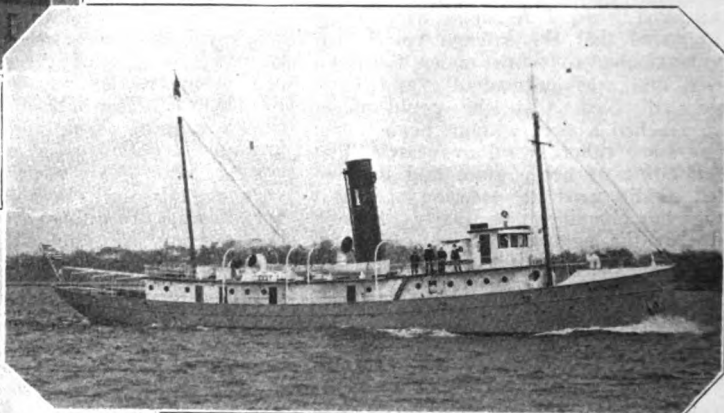
Old lake steamers Corsica and Selwyn Eddy at Norfolk, still in New England coal trade. Ex-Kaiser's yacht Germania at left.



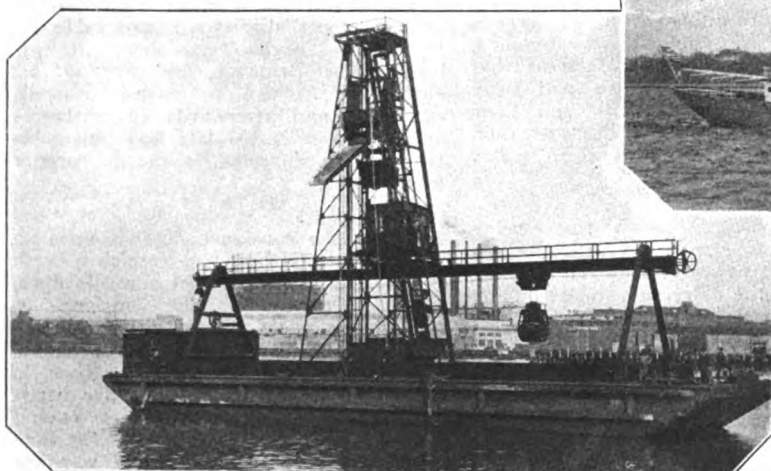
Royal Mail steamer Narenta being repaired at Todd plant, Seattle. The contract came in face of Canadian competition after vessel grounded in Puget Sound. Contract time was 42 days, actual time only 33 days



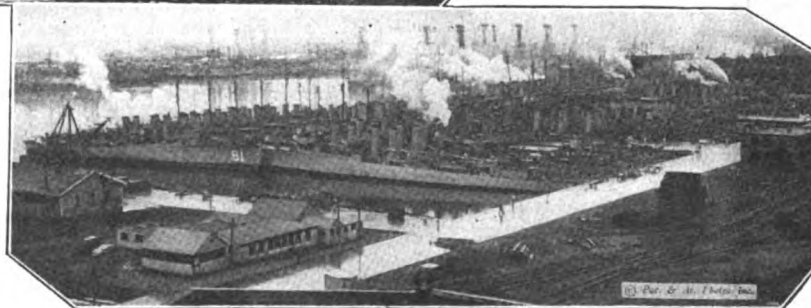
Wireless station at Bush Terminal, Brooklyn, handling marine messages for Radio Corp.



New Pilot boat Maryland now on duty off Cape Henry, Md. She is rated as a model.



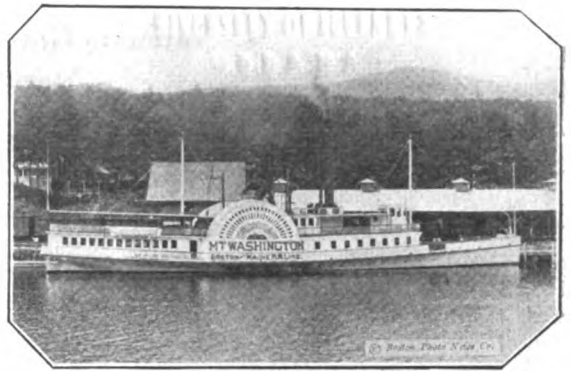
Special type coal-barging barge used by Standard Coal Co. at Oakland, with capacity of 100 tons per hour.



At Philadelphia navy yard, 109 destroyers are out of commission. Side by side are the old cruisers and battleships scheduled for the scrap pile as a tribute to disarmament.

Latest Marine News in Pictures

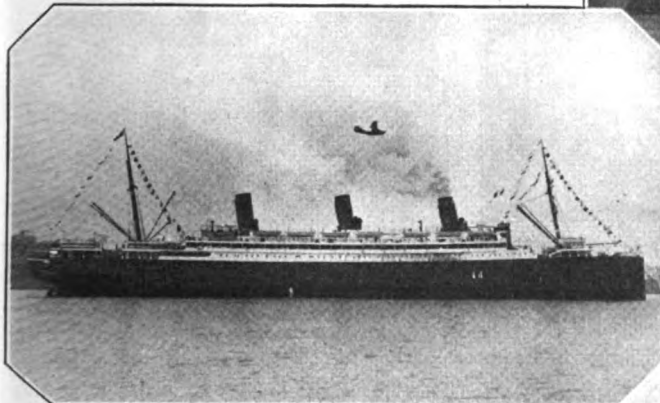
Boston & Maine railroad steamboat Mt. Washington which has operated on Lake Winnepesaukee, N. H., for 50 years. She is to be discarded in favor of light draft, gaso-line launches.



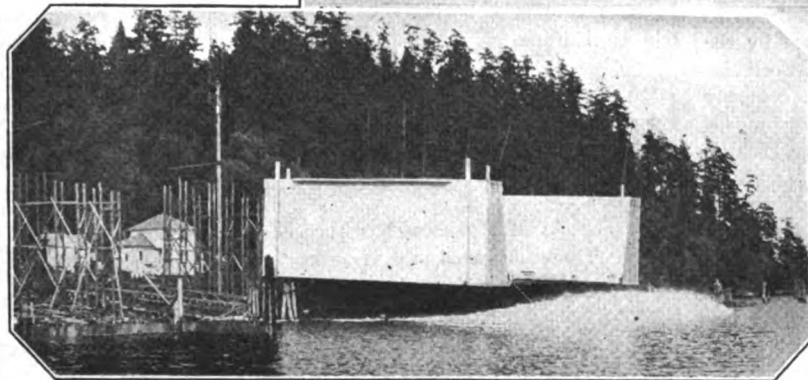
One of America's crack, new liners, S. S. Resolute, 20,000 tons, bought by United American lines from the Dutch. United American officials in charge of the Resolute, left to right, R. H. Robinson, president; Captain Malman, fleet commodore; Emil Lederer, passenger traffic director, and W. A. Harriman, chairman.



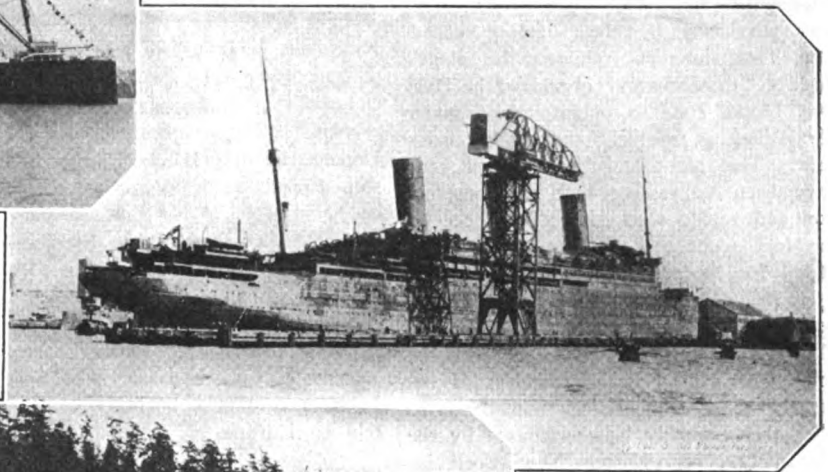
Resolute is shown on her first arrival at New York late in April. Her name commemorates a famous yacht.



Unusual launching view, showing first dip of 90 by 126-foot section of dry-dock Todd repair yard at Seattle. With four sections now in use, she will make a 15,000-ton floating dry-dock capable of lifting the 535-foot American liners on the Pacific.



Great Leviathan, now the President Harding, being re-conditioned at Newport News, Va.



Marine News in a Personal Way

Intimate Gossip About What Leaders in the
Maritime World Are Doing

IN RECOGNITION of his successful direction of the affairs of the Todd Drydock & Construction Corp., Tacoma, Wash., and the Todd Dry Docks Inc., Seattle, C. W. WILEY has just been made chairman of the boards of both companies. He has been president of both firms since their organization. Several of the younger executives have been promoted. J. A. EVES, formerly vice president and general manager of the Todd Drydock & Construction Corp., becomes president. In the same organization, W. C. NICKUM, naval architect, and JOHN GARDNER, engineer, have been elected vice presidents. In the Todd Dry Docks Inc., H. W. KENT, formerly vice president and treasurer becomes president. A. R. HUNT, who has been general manager of the Seattle plant, becomes also vice president. O. A. LUND, one of the youngest of the Todd executives, has been named secretary and treasurer. He has been secretary and assistant treasurer.

Mr. Wiley has directed the two companies during the war as well as in the past readjustment period. He became associated with William H. Todd in July 1916, when the Todd Shipyards Corp., New York, bought the Seattle Construction & Drydock Co. He served as president until May 1918, when this plant was purchased by the shipping board. The Todd interests retained the plant's three big drydocks and organized the Todd Dry Docks Inc., to operate them under Mr. Wiley as president and general manager. This plant and the Tacoma yard have been aggressive both in construction and repair work, including three of the fast scout cruisers now being completed for the navy.

H. W. KENT has been associated with Seattle shipbuilding and repair work for 21 years. In July 1901, he entered the employ of Moran Bros., founders of the Seattle steel shipbuilding industry. In 1906, this company was purchased by the Moran Co., representing New York interests. In January, 1912, the company was bought by the J. V. Paterson interests and reorganized as the Seattle Construction & Drydock Co. Mr. Kent continued through each change of ownership and with the entrance of the Todd interests was made vice president and treasurer of the Todd Dry Docks Inc.

A. R. HUNT joined the Seattle firm in 1912, serving in the shipping board staff during the war. He is an experienced

marine engineer. O. A. LUND began with the Moran Co. in 1909 as a stenographer, becoming assistant treasurer in 1916 and secretary in 1918.

WILLIAM H. MCCLOUD, formerly director of traffic for the John L. Willys Export Corp., has been appointed manager of offices opened at 607 Press building,



C. W. WILEY

Chairman of the Boards of the Todd Companies
at Seattle and Tacoma

Detroit, by the Black Diamond Steamship Corp.

R. B. VANDERGRIFF has been added to the staff of the Williams line, Philadelphia, as assistant traveling freight agent.

ROBERT HASLER, senior partner in Hasler & Co., Norfolk ship operators, is on a 3-months business and pleasure trip to Europe.

CHARLES A. TUCEK has received the appointment as general freight agent at Cleveland for the American-Hawaiian Steamship Co.

DONALD A. MCPHERSON has succeeded P. H. TODD, deceased, as secretary of the North Atlantic eastbound conference with headquarters at San Francisco.

A. R. LINTNER, formerly assistant

manager of the construction department of the Emergency Fleet corporation, has been named as executive assistant to R. M. Semmes, director of the shipping board's Northwest division with headquarters at Seattle.

HUGH GALLAGHER has been appointed assistant general manager of the Admiral line with headquarters 112 Market Street, San Francisco.

F. N. BUSH, recently with the Admiral line, has been appointed manager of the office at Portland, Oreg., opened recently by Sudden & Christenson.

GEORGE J. YATER has resigned as director of traffic of Dunham & Moore, New York, to become traffic manager of Norton, Lilly & Co. at San Francisco.

OTTO OLSEN, who had been with the M. H. Tracy Co., 17 State street, New York, has joined the chartering department of A. C. Elliot & Co., 16 Beaver street, New York.

MICHAEL J. BUCKLEY, recently appointed assistant traffic manager of the Robert Dollar Steamship Co., with jurisdiction over the California district, for years was with the Pacific Mail Steamship Co.

M. WATANABE, for several years manager at Seattle for the Nippon Yusen Kaisha, has been promoted to a higher position at the company's headquarters at Tokio. He has been succeeded by T. Ishizawa, transferred from Tientsin.

F. RIKER CLARK, secretary of P. Kleppe & Co. Inc., and the Kleppe Lines Inc., both of 11 Moore street, New York, has been admitted to partnership in both organizations. He has served both as general traffic manager since their organization and will continue in that capacity.

J. P. POWELL, editor and publisher of the *Weekly Review* and honorary secretary of the American Chamber of Commerce of China, at Shanghai, sailed recently from Seattle, after a year in Washington, D. C., in behalf of the China Trade act, the proposed bill permitting the federal incorporation of American firms in China.

Marine News in a Personal Way

Intimate Gossip About What Leaders in the
Maritime World Are Doing

LOUIS F. KLEIN has been appointed manager of the inland offices division of the traffic department of the Emergency Fleet corporation. Mr. Klein has been identified with traffic management for many years, having been connected with the Illinois Central railroad as general eastern agent in New York, and with the Western Maryland railroad.



J. A. EVES

New President of Todd Drydock & Construction Corp., Tacoma

For the past six years he has represented the firm of E. J. Lavino & Co., Philadelphia, in Brazil, having charge of their extensive manganese operations in that country. In addition to his railway affiliations he has made a study of steamship operation and is conversant with the services operated by the shipping board and its competitors. Following are the managers of the inland bureaus and the cities where they will be located: J. T. SMITH, Detroit; T. PARK HAY, Chicago; G. M. BUSH, Kansas City; R. J. WHITMIRE, Minneapolis; and J. S. HOUSTON, Memphis.

* * *

R. J. RINGWOOD has been appointed freight traffic manager of the Admiral Line, with headquarters in the L. C. Smith building, Seattle, succeeding H. C. CANTELOW. E. G. McMICKEN has been named passenger traffic manager with headquarters in the L. C. Smith

building. H. S. EATON has been appointed general agent with jurisdiction over all the line's affairs at Portland, with offices at 101 Third street.

* * *

CAPT. MARTIN F. TARPEY, after making one voyage to the Orient as master of the Admiral line's express liner BAY STATE, has been appointed port captain at San Francisco for the same company. CAPT. THOMAS P. QUINN, recently master of the steamer POMONA, took Capt. Tarpey's place on the BAY STATE.

* * *

W. E. MARTIN, recently placed in charge of marine work for the Westinghouse Electric & Mfg. Co., on the Pacific coast, will make his headquarters in San Francisco. Mr. Martin has been interested in electric propulsion and auxiliaries for ships for many years. Since he joined the Westinghouse company in 1915 he has been an active proponent of the diesel electric propulsion idea for certain types of vessels.

* * *

ROBERT J. CLOSE, for 15 years fleet engineer of the G. A. Tomlinson Co., Duluth, Minn., has resigned to take the position of superintendent of the Superior, Wis., yard of the American Shipbuilding Co. He takes the place of HERBERT MOSHER, who since Jan. 1, has been in charge of the Milwaukee interests of the company. Mr. Close is an expert on reconstruction and repair of lake carriers and other vessels.

* * *

J. LOUIS SCHAEFER, senior partner of W. R. Grace & Co., New York, and for many years vice president and treasurer, completed April 29, 40 years of service in the Grace organization. The associate members of the New York office held a celebration in his honor and presented a loving cup. Although Mr. Schaefer has completed a record of service of unusual length, he is still quite active in the direction of the company's affairs. He is 56 years old, having been born in New York on Aug. 4, 1866. He joined the company on April 29, 1882, when less than 16 years of age. He served directly under William R. Grace, founder of what has become one of the great international trading houses of the world. Mr. Schaefer served in practically every department

of the business, becoming vice president in 1906. He has kept in active touch with the agencies of the organization abroad. His first trip to South America for the Grace firm was a nonstop voyage to Chile, by way of the Straits of Magellan. On a following trip, he was at Panama when that country successfully rebelled against Colombia. Photo-



H. W. KENT

New President of Todd Dry Docks, Inc., Seattle

graphs which he took are now part of the American government's official records. He has specialized in the financial activities of the company, including the founding and conduct of the W. R. Grace & Co. Bank. Mr. Schaefer is secretary, treasurer and a director of the Grace Steamship Co. and treasurer and a director of the Atlantic & Pacific Steamship Co.

* * *

WILLIAM H. TODD, president of the Todd Shipyards Corp., has been elected president of the company's new subsidiary, the Todd Shipbuilding & Dry Dock Co., Inc., Mobile, Ala. Other officers are: First vice president, ARTHUR E. GODDARD; second vice president, ANGUS MARSHALL; secretary and treasurer, JOHN D. REILLY; and assistant treasurer, JOHN F. BUTLER. Directors are William Todd, Arthur Goddard, DAVID LANMAN, JAMES H. TODD, H. HARTWELL and Angus Marshall.

Editorial

More New Ships Ordered

SHIPBUILDING is joining in the march toward more business. Readjustment in this industry was unusually severe, as much of the war work was handled by newly organized companies. When competition tightened, many of these firms dropped out willingly, while others fought on. Some new companies are now established, efficient units, while some old companies have been forced out. Those in business today represent the best of the companies which a few years ago were building ships without the restraint of competition.

On the Great Lakes, the main shipyard revival has started. For some months, it has been obvious that the lake yards would lead the way. Replacement of tonnage on the lakes was prevented by war conditions and later by war inherited price levels. With prices down, the fleets must resume their active construction to take the place of lost or worn out tonnage.

On the American side, four big bulk freighters have just been ordered and more are near the contract stage. Two passenger liners are also likely to be placed.

On the sea coasts, several notable orders have been let. The volume of inquiry is huge, architects' offices being busier than in any other periods in years. Many small boats are up for contract, with coastwise passenger ships also in demand. Some of the latter have been ordered and more will follow. For deep sea service, action on new ships is likely to be deferred until legislative action by congress on the subsidy.

For an industry which has just passed through a year of stagnation, shipbuilding is showing exceptional ability to recover.

Overestimates on the Shipping Slump

BUSINESS depression as applied to particular industries is frequently easy to measure. The steel business, as an illustration, reports regularly on the percentage of steelmaking capacity in operation, and the number of active blast furnaces. But in the marine trade, a correct yardstick has been difficult to apply.

As a result of this lack of precise knowledge, the past year's slump in the marine field has likely been heavily overestimated. Records just obtained by MARINE REVIEW show that on the basis of vessel tonnage in service, the shipping industry on March 1 was operating on a 49 per cent basis. This contrasts with a 20 per cent basis reached by the steel industry at the bottom of its slump.

The 49 per cent basis of March 1 was a slight betterment over earlier months, while the May 1 figure will prove to be still higher. The shipping board at the opening of March was operating only 33 per cent

of its ships. Private owners were running 85 per cent.

The reason for the overestimation in the marine trade is clear. Idle ships cluster in common anchorages and present impressive group evidence of inactivity. Industrial plants, widely scattered, do not present the same forceful picture. In the same way, active ships are widely scattered while active plants are generally grouped.

Last year carried a drab story for most American industries, shipping included. This year is telling a promising story. Shipping, as revealed by the above record, started its slump late, never reached the depths plumbed by many other lines and is now among the leaders in the revival.

Experimenting with Public Funds

CONSTRUCTION cost of the 23 passenger liners built for the shipping board since the armistice has already reached \$130,554,297.28. The individual 535-foot liners range in cost from \$4,023,107.47 for the WESTERN WORLD, just delivered, to \$7,317,318.15 for the PRESIDENT JEFFERSON, ex-BEAVER STATE. The 502-footers range within a few thousand dollars, the average cost being \$4,086,000. Complete charges undoubtedly are not available on the later ships, so the fleet of 23 liners will represent a completed construction cost of about \$140,000,000.

As a government experiment, this venture sets a record for costliness which no American taxpayer will want to see equalled at any future time. The first cost is not the whole story, of course, since under governmental reins, operating costs run away with receipts.

Passenger liners have been and are badly needed to complete American shipping. But the way to get them is through private owners, buying and operating under competitive conditions and encouraged by a common sense congress rather than a liberal treasury.

Farmers Change Sides on Subsidy

SUBSIDY in principle is opposed by American farmers, if one may accept the American Farm Bureau Federation as the authorized spokesman. That organization has just endorsed the ship subsidy bill now before congress. The apparent contradiction is accounted for by the farmers' decision that the "necessity for developing the American merchant marine as a naval auxiliary and as an agent in the development of foreign trade" outweighs the general harm of subsidy as a principle. The farmers approve temporary governmental aid until the flag is established on the high seas.

Opposition to the subsidy bill has not yet revealed itself in any substantial, organized form. When it does come, the farmer for the first time will not be found in the front ranks.

Puts Biggest Gyro Aboard Ship

United States Line Installs Stabilizer on Hawkeye State
To Increase Passengers' Comfort—Demonstration Given

SUCCESSFUL ship tests have been made of the Sperry gyroscope stabilizer which is to be placed aboard the United States line's HAWKEYE STATE. This marks the initiation of a principle of mechanical stabilizer to commercial passenger vessels, which was made possible through the co-operation of the United States shipping board. This government-owned passenger boat will be the first in the history of navigation which will take precautions of this type against the cause of seasickness and afford to the traveling public a vessel which will go through a storm without rolling and with the ease with which she navigates a calm sea. Seasickness is caused primarily by the rolling of the ship. For this reason, the largest vessels have the advantage, for the larger the ship the rougher the sea has to be to make her roll.

Steadies Smallest Ships

With the gyroscope stabilizer the smallest passenger vessels can be made just as smooth running as any giant ship, it is claimed. Although the foreign companies have made considerable advances in building large vessels in which the rigors of sea travel would be minimized, those large vessels have not entirely escaped the rolling and pitching of the sea. Millions of dollars have been spent in the last few decades to stabilize passenger vessels by the use of heavy shifting weights, rolling water tanks, etc. With the gyroscope stabilizer, it is said the rolling of the ship is absolutely prevented.

After many tests with models, the first stabilizer was installed on the U. S. S. WIDGEON in 1914 and from that time on the success of the gyro stabilizer has been assured. It became almost indispensable aboard the American destroyers during the war as the destroyers were compelled to operate in all kinds of weather and stability was a belligerent asset unmeasured by dollars.

Private steamship lines have been slow to adopt the innovation, however, which is not at all unusual, leaving further tests of proof of worth to the government. At the same time numerous stabilizers were installed aboard pleasure craft constructed within the past year or so. A stabilizer was installed on Cyrus H. K. Curtis' yacht LYNDONIA in the beginning of 1921 by the Sperry Gyroscope Co. and Mr. Curtis has made several long cruises, encountering much

rough weather, in perfect comfort. The stabilizer was installed on Edgar Palmer's diesel electric driven schooner GUINEVERE the latter part of last year. The GUINEVERE is now preparing to make a long cruise. Stabilizers have been installed on many other yachts and also many naval vessels, the largest up to 1921 being on the 10,000-ton navy transport U. S. S. HENDERSON. In January a stabilizer for a 10,000-ton Japanese vessel was shipped to Japan.

Now comes the first stabilizer for the passenger service. On Thursday, April 13, Elmer A. Sperry, inventor of the stabilizer, made an inspection and demonstration of his finished product. The demonstration was before a party of steamship executives and naval architects at the Essington works of the Westinghouse Electric & Mfg. Co. near Philadelphia. Among those present at the demonstration was T. H. Rossbottom, manager of the United States lines, which will operate the HAWKEYE STATE in trade between New York and London. Others witnessing the demonstration were Capt. Roger Williams and Mr. Robertson of the International Mercantile Marine Co.; Messrs. Pryor and Belsford of the department of maintenance and repairs of the Emergency Fleet corporation; Charles F. Bailey of the Newport News Shipbuilding & Dry Dock Co.; Vice President Magoun of the New York Shipbuilding Corp.; Vice President Bailey of the New York Shipbuilding Corp.; Howard F. Brown, naval attache of the British embassy; R. Haig, vice president of the Sun Shipbuilding Co.; Com. B. Villain, Commander Russell, and other United States naval officers, and various representatives of the Sperry Gyroscope Co. and of the Westinghouse Electric & Mfg. Co.

Is Largest Stabilizer

That occasion was noteworthy from several standpoints. In the first place this is the largest gyro stabilizer ever built, and secondly, as pointed out, it is the first gyro stabilizer to be used for a passenger vessel. Architects are of the opinion that it promises to influence greatly the future of passenger service in that it will render the smaller passenger vessels comparatively as comfortable as the largest of the passenger ships.

This particular gyroscope is 13 feet in diameter, weighs 100 tons and will operate at 800 revolutions per minute. The wheel was forged by the Bethlehem

Steel Co. and the finish machining and balancing was done by the Westinghouse Electric & Mfg. Co., which also collaborated in the design and manufactured all the remainder of the equipment under the supervision of the Sperry engineers. While this stabilizer is heavy in weight it is small when it is considered that it will keep a vessel of 20,000 tons and 535 feet in length from rolling in a rough sea. The stabilizer is now being installed on the HAWKEYE STATE, which is being reconditioned for the United States lines for their North Atlantic run. It will be in service the latter part of July.

Can Also Rock Vessel

When in use this great spinning wheel will revolve in a horizontal plane around an axis perpendicular to the keel of the ship. As long as the ship remains level, the gyroscope has no effect on the ship regardless of its motion. If the gyro's axis is tilted so it is revolving at an angle with its previous plane, the mechanism will control the vessel being able to rock this ship violently in smooth water or prevent its being rocked in rough water.

As long as the ship remains level, the big top spins along in its level plane, but as soon as the deck shifts as much as 3 per cent from level, an amount which it is not possible for a person to notice, it is detected by a sensitive smaller gyro which acts as the brains of the giant, and the latter is tilted to an angle sufficient to cause an impulse great enough to equalize and stop the roll just beginning. This is all done in a length of time measured by a few fractions of a second. Repeated again and again, this means that regardless of wave conditions the deck of a vessel equipped with a stabilizer will not vary from level more than 3 per cent, an amount much less than the variation of the floor of an ordinary moving railway car.

Reversing the operation, the stabilizer can artificially roll the ship in still waters. This means that should the ship get stuck on a reef or other obstruction, it is possible the gyro can be used to rock her loose, thereby making the ship her own salvor. Also, in being able to prevent rolling in a rough sea, the ship can be kept more nearly upon her course. This means fuel saving and time saving in making a transit of the ocean, it is claimed.

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	454	1,651,584	473	1,758,160
March	462	1,708,727	484	1,829,016
February	414	1,548,412	391	1,533,163
January	370	1,230,000	396	1,436,614
December, 1921..	398	1,372,663	436	1,604,960
November	423	1,543,430	415	1,506,071
October	413	1,662,564	428	1,644,729
September	385	1,304,544	417	1,556,645
August	478	1,583,991	390	1,300,897
July	394	1,456,304	403	1,423,109
June	408	1,368,334	419	1,425,649
May	425	1,454,033	366	1,328,643
April	410	1,453,056	438	1,509,353

Philadelphia				
(Including Chester, Wilmington and the whole Philadelphia port district)				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	94	245,785	63	197,807
March	107	288,295	79	257,149
February	94	240,663	62	189,140
January	86	243,546	67	211,468
December, 1921..	89	256,660	90	285,894
November	89	249,873	87	252,606
October	86	239,103	67	204,652
September	60	143,434	66	195,558
August	84	208,961	61	144,029
July	75	178,925	61	148,674
June	71	176,968	74	214,524
May	110	295,617	70	178,464
April	105	255,249	79	209,854

Norfolk and Newport News				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	18	59,180	83	232,485
March	29	77,775	79	235,809
February	24	66,156	72	192,640
January	22	78,412	53	152,957
December, 1921..	24	83,609	64	184,012
November	27	84,214	60	171,235
October	23	68,037	59	151,849
September	25	75,836	51	148,987
August	44	134,193	63	173,111
July	95	267,846	173	491,104
June	140	410,926	238	728,458
May	129	398,042	201	601,675
April	57	179,852	125	375,044

San Francisco				
(Inclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	419	796,654	465	895,918
March	418	816,268	446	819,813
February	409	744,590	390	729,773
January	415	797,676	416	759,577
December, 1921..	439	845,793	461	854,595
November	432	791,219	445	869,988
October	445	780,840	454	787,144
September	459	807,276	440	749,911
August	464	770,980	457	788,238
July	275	699,092	335	676,340
June	194	474,948	211	543,629
May	271	594,409	164	426,255
April	377	607,559	452	703,717

Baltimore				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	98	277,582	110	319,103
March	107	323,515	125	362,451
February	93	294,309	103	334,507
January	72	225,800	85	274,080
December, 1921..	95	281,373	102	312,528
November	78	243,934	80	253,943
October	73	249,481	78	252,098
September	85	259,788	81	260,789
August	90	251,499	87	239,482
July	116	349,379	123	365,666
June	118	359,201	133	413,410
May	109	341,731	112	341,381
April	114	320,195	119	351,950

Seattle				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	126	322,466	152	356,850
March	198	508,760	202	515,606
February	159	478,849	147	417,425
January	174	479,514	177	509,508
December, 1921..	183	528,191	180	517,996
November	177	489,119	166	454,118
October	163	431,637	157	443,447
September	168	434,912	150	387,151
August	202	519,467	192	517,253
July	158	450,050	159	436,884
June	100	331,505	110	341,278
May	106	299,777	99	282,583
April	143	339,192	163	370,070

New Orleans				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	221	565,559	225	594,842
March	235	643,251	258	716,568
February	197	582,189	201	576,973
January	225	621,483	217	603,995
December, 1921..	208	576,354	271	788,172
November	209	533,483	219	600,086
October	177	431,976	176	425,186
September	191	510,646	226	628,057
August	210	478,941	194	482,451
July	157	371,379	176	410,749
June	172	440,527	195	479,495
May	166	410,047	145	354,539
April	205	515,287	210	530,283

Boston				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	71	138,683	103	270,499
March	85	241,289	56	135,671
February	76	218,853	58	153,350
January	70	185,175	42	108,423
December, 1921..	94	239,170	61	134,039
November	62	137,585	80	180,940
October	99	229,800	67	158,695
September	88	197,208	69	144,268
August	100	280,687	63	102,032
July	98	178,403	81	115,503
June	138	211,667	100	119,945
May	122	190,148	87	98,008
April	101	217,080	71	133,952

Mobile				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	61	144,237	62	123,238
March	73	136,937	57	110,363
February	54	126,606	59	117,172
January	71	147,866	64	136,242
December, 1921..	85	194,757	87	216,233
November	87	104,489	47	86,539
October	64	124,089	60	122,949
September	55	95,343	46	89,460
August	57	108,936	48	83,486
July	67	156,801	58	101,850
June	53	101,592	51	92,800
May	43	67,627	45	71,756
April	96	249,996	76	150,776

Los Angeles				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	53	161,709	45	138,927
March	75	172,471	59	139,424
February	76	105,243	63	108,207
January	88	149,622	101	125,795
December, 1921..	94	161,393	81	137,450
November	66	42,054	90	69,275
October	68	124,682	76	123,276
September	54	128,611	45	119,275
August	50	117,775	40	106,243
July	45	144,913	34	101,581
June	27	100,411	31	100,580
May	35	98,885	26	77,036
April	32	119,049	28	71,958

Key West				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	77	81,917	81	86,471
March	97	78,984	92	76,531
February	84	67,080	78	68,137
January	77	69,850	77	72,321
December, 1921..	76	73,276	74	70,169
November	70	79,586	67	78,618
October	55	66,400	59	67,608
September	62	77,229	70	101,948
August	65	69,911	59	66,223
July	85	89,901	86	87,449
June	105	104,326	104	101,494
May	100	104,326	104	103,571
April	115	117,586	111	114,748

Portland, Me.				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	14	51,228	18	62,091
March	23	81,938	20	77,044
February	23	73,634	24	75,625
January	21	64,885	21	67,309
December, 1921..	29	92,777	32	99,527
November	24	37,712	12	16,794
October	13	21,191	8	13,652
September	10	15,345	12	26,224
August	13	17,942	13	14,265
July	13	15,195	11	9,597
June	15	15,723	12	12,749
May	4	8,324	10	8,885
April	17	54,804	19	64,310

Savannah				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	8	20,485	15	42,591
March	6	12,845	19	47,946
February	9	17,568	15	40,622
January	6	11,561	9	23,601
December, 1921..	4	8,876	14	43,281
November	10	19,543	16	44,187
October	6	10,417	13	37,447
September	3	5,152	19	56,024
August	17	33,428	24	55,108
July	10	17,469	16	33,712
June	11	16,603	13	35,242
May	5	9,507	16	36,377
April	17	40,418	12	25,543

Galveston				
(Exclusive of Domestic)				
Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	64	190,675	63	210,853
March	66	155,728	56	166,298
February	45	134,229	48	138,48

Marine Business Statistics Condensed

Port Traffic Record

Houston

(Exclusive of Domestic)

Month	Entrances—		Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	42	61,751	47	98,825
March	48	45,312	40	105,309
February	28	27,173	30	86,028
January	32	53,779	31	92,096
December, 1921..	22	42,359	21	27,001
November	23	30,705	27	46,519
October	17	36,682	16	32,223
September	24	74,633	28	26,929
August	24	15,558	21	58,492
July	28	39,566	28	54,057
June	27	33,405	19	33,187
May	19	10,705	20	38,180
April	25	44,706	26	43,695

Port Arthur, Tex.

(Exclusive of Domestic)

Month	Entrances—		Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	90	282,288	101	313,829
March	91	318,679	87	269,369
February	73	233,148	81	250,138
January	82	261,439	77	261,604
December, 1921..	106	359,401	104	339,605
November	92	286,179	89	263,940
October	93	256,932	89	263,993
September	87	224,944	92	254,039
August	74	193,578	70	167,193
July	70	168,438	59	142,181
June	76	212,571	85	214,705
May	71	193,427	56	141,542
April	78	198,616	84	203,895

Providence

(Exclusive of Domestic)

Month	Entrances—		Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
April, 1922.....	9	24,854	7	31,049
March	12	45,966	8	34,272
February	13	53,367	11	46,372
January	11	46,093	12	50,449
December, 1921..	8	26,053	16	50,847
November	12	50,551	16	59,677
October	13	46,530	10	44,661
September	12	43,665	19	65,515
August	6	19,722	3	13,095
July	14	45,133	4	13,674
June	7	21,703	16	43,556
May	12	34,612	9	24,997
April	13	42,378	9	37,802

April Ore Shipments

In the closing days of April, the lake fleet loaded 136,161 gross tons of iron ore at upper lake docks against shipments in the corresponding month last year of 176,211 gross tons. By ports, the shipments were:

	Gross tons—	
	Apr., '22	Apr., '21
Escanaba	40,219	.....
Marquette .....	.....	.....
Ashland	24,555	9,149
Superior	52,387	111,848
Duluth	19,000	27,431
Two Harbors .....	.....	27,783
Total	136,161	176,211
1922 decrease	40,050	.....

New Shipping Firms

April showed a striking gain in the indicated investment in new marine enterprises. Twelve companies were incorporated for a total of \$31,050,000, the highest mark since October, 1920. The April record was more than half of the entire indicated investment for all of last year. The March total was only \$750,000. While the April figure was boosted by the United Irish Transatlantic Lines Inc.,

with an indicated investment of \$21,000,000, three other firms are listed at \$1,000,000 or more. The record complied by the *Journal of Commerce* New York, follows:

Americas Sea Transport Corp.....	\$2,000,000
Balkan Navigation Co., Delaware...	100,000
California-Tahiti Steamship Co., Delaware	500,000
Co-operative Transit Co., Delaware...	100,000
Checker Cab Mfg. Corp., Delaware...	3,500,000
Far East Steamship Corp., New York	100,000
Interstate Steamboat Corp., Delaware	1,200,000
North River Boat Works, Inc., New Jersey	100,000
Ohio & Mississippi Transport Co....	2,250,000
Phoenix Steamship Corp., Delaware...	150,000
Spiel, Wilbur F., & Co., Maryland...	50,000
United Irish Transatlantic Lines, Inc., Delaware	21,000,000
Total	\$31,050,000

Lake Erie Receipts

Out of a total of 136,161 tons shipped from upper lake ports in April, Lake Erie ports received 22,036 tons as shown by figures compiled by MARINE REVIEW. The balance on dock May 1 was 6,988,877 tons compared with 8,089,216 tons on May 1, 1921. Detailed figures are:

Port	Gross tons
Buffalo	11,159
Erie .....	.....
Conneaut .....	.....
Ashtabula	10,877
Fairport .....	.....
Cleveland .....	.....
Lorain .....	.....
Huron .....	.....
Toledo .....	.....
Detroit .....	.....
Total	22,036

Ore on Dock May 1

Taking May 1 as the opening of navigation, the balance of iron ore on Lake Erie docks this year was 6,988,877 tons. This compares with 8,089,216 gross tons a year ago. On May 1, 1920, the balance was 6,192,101 gross tons; and on May 1, 1919, was 5,681,085 gross tons.

Statistics gathered by MARINE REVIEW from various dock managers at Lake Erie ports show that the total rail shipments from Lake Erie ports to furnaces during the winter season from Dec. 1, 1921 to May 1, 1922, were 2,108,032 gross tons. Winter shipments during 1920-21 were 2,841,638 gross tons. Last winter shipments were:

Tons	
On dock Lake Erie ports, Dec. 1, 1921	9,096,909
On dock May 1, 1922.....	6,988,877

By rail to furnaces, winter of 1921-22

2,108,032
The amount of ore shipped to furnaces by Lake Erie docks during the 1921 navigation season was 14,822,764 gross tons which, added to the winter shipments, give a total of 16,930,796 gross tons of ore forwarded to furnaces over these docks in the year ended May 1, 1922. This total compares with 44,-

492,879 gross tons moved in the corresponding period ended May 1, 1921; 36,912,569 gross tons in the year ended May 1, 1920; 48,123,949 gross tons in the year ended May 1, 1919, and 47,963,072 gross tons in the year ended May 1, 1918. Port records of ore on docks are:

Port—	Gross tons	
	May 1, 1922	Dec. 1, 1921
Buffalo	301,093	312,475
Erie	442,218	601,661
Conneaut	1,099,656	1,914,045
Ashtabula	2,241,624	2,742,617
Fairport	235,679	340,927
Cleveland	1,237,656	1,367,589
Lorain	446,052	769,840
Huron	673,636	699,850
Toledo	311,263	347,905
Total	6,988,877	9,096,909

Soo Canal Report

Freight movement of 639,049 net tons through the Soo canal in April, 1922, shows a loss of 318,082 tons over the opening month in 1921, when the total freight was 957,131 tons. Comparison of tonnage figures for the past seven years follows:

	Net tons
April, 1922	639,049
April, 1921	957,131
April, 1920	537,209
April, 1919	2,373,163
April, 1918	422,489
April, 1917	258,290
April, 1916	2,215,362

Figures in detail for 1922 and 1921 are:

EASTBOUND		
	To May 1, 1922	To May 1, 1921
Lumber, M. ft. B. M. ....	.....	.....
Flour, barrels	51,730	54,540
Wheat, bushels	9,708,560	8,592,826
Grain, bushels	5,751,710	7,418,708
Copper, net tons .....	.....	135
Iron ore, net tons	80,864	95,328
Pig iron, net tons	40	.....
Stone, net tons .....	.....	.....
General merchandise, net tons	79	1,457
Passengers, number .....	.....	.....
WESTBOUND		
Coal, soft, net tons	109,000	259,288
Coal, hard, net tons	5,000	109,719
Iron ore, net tons .....	.....	.....
Mfd. iron and steel, net tons	1,742	1,296
Salt, net tons .....	.....	3,045
Oil, net tons	2,544	52,526
Stone, net tons .....	.....	.....
General merchandise, net tons	23,349	12,799
Passengers, number .....	.....	5
SUMMARY		
Vessel passages, number ..	276	370
Registered tonnage, net... ..	676,002	639,502
Freight—		
Eastbound, net tons....	497,414	518,458
Westbound, net tons....	141,635	438,673
Total freight, net tons..	639,049	957,131

Lake Michigan Receipts

Receipts of ore at Lake Michigan ports in April were 27,441 gross tons as shown in the following record by ports:

Port	Gross tons
South Chicago, Ill.	7,967
East Jordan, Mich. ....	.....
Boyne City, Mich. ....	.....
Milwaukee .....	.....
Indiana Harbor, Ind.	19,474
Gary, Ind. ....	.....
Total	27,441

1921 Traffic Through Suez Canal

The total tonnage of vessels transiting the Suez canal in 1921, as reported to the transportation division of the department of commerce, was 18,118,999 net tons, an increase of 544,000 tons over 1920, although there was a decrease of 34 in the number of vessels. The increase in tonnage is due to the fact that big liners which were used as transports during the war have been repaired and returned to their old routes.

Traffic through the canal is still below its prewar level, as the following table shows:

Year	Steamships		Other vessels		Tons of cargo
	Number	Net tons	Number	Net tons	
1913.....	5085	20,034,000	.....	.....	25,776,000
1919.....	3986	16,013,802	2406	431,536	13,973,000
1920.....	4069	17,574,657	3133	230,594	17,047,000
1921.....	3975	18,118,999	3257	155,820	17,507,000

Marked increase is shown in the southbound movement of coal during 1921 as compared with 1920 and 1919. From the outbreak of the war, coal shipments southward through the canal declined steadily until 1920, when the total for the year was scarcely more than the prewar monthly average. In spite of the disturbance in the British coal industry during the first half of 1921, total shipments of this commodity have practically regained their former volume. The movement of metals and machinery, including railway material, also increased over 1920, but was still below the prewar level. Compared with 1913, the total cargo passing south during 1921 was 4,745,000 tons, or 42 per cent less than in 1913.

The volume of rice moving northbound during 1921 was almost twice that for 1920, but slightly under the amount shipped in 1913. Wheat also shows a substantial increase, being greater than both the 1913 and 1920 figure. Shipments of benzine and mazout were more than four times their prewar volume. As a whole, the 1921 northbound traffic showed a slight increase over the preceding year, but was 24 per cent less than the 1913 traffic.

Approves Subsidy Bill

The Merchants Association of New York has declared its support of the ship subsidy bill now before congress. Based upon the investigation of its maritime committee, headed by George L. Duval of Wessel, Duval & Co., 25 Broad street, New York, the report makes two modifying recommendations. One calls for extending the 10 per cent profit limitation imposed for any single year to apply over a series of years, while the other would omit or

change the requirement that industrial companies operating their own ships should throw open one-third of the cargo space to general commercial business.

Provides Port Control

Under the provisions of a bill signed by Governor Neff of Texas, the Harris county navigation board will be authorized to take over the control and development of the Houston ship channel and of the terminal facilities of the port of Houston, if two-thirds of the qualified voters of the navigation district vote favorably. It will also enable the navigation

district to issue bonds for the improvement and development of the channel and port facilities on a majority vote of the taxpayers. It is predicted that when the question is submitted to the voters, that it will carry by a safe majority. It is probable the board will petition the county commissioners for a hearing relative to a special election on the question at any early date.

According to the provisions of the bill any navigation district containing a city of 100,000 population or over, which desires to take over the control of the port facilities of such district, may petition the county commissioners and ask for a hearing. At this hearing those opposed to the proposition may appear and make their protests. If after the hearing the navigation board is still desirous of taking over the control of the port facilities, then the commissioners shall order an election to decide the question by a two-thirds vote.

Select Fifty Best Books of the Sea

By popular vote of the officers of the British mercantile marine, taken some time ago by the *Nautical Magazine* of Glasgow, Scotland, a list of 50 of the best books of the sea has been determined. The object of the vote was to compile a list which would be a guide to cadets and junior officers in selecting books to read; to shipowners in providing libraries for their ships, and to others interested. Technical books were ruled out, but one consideration was that the books should assist the sailor in acquiring the general knowledge essential to pass examinations for certificates and to practice his profession. Under the opening for good literature, a few land lub-

ber books were voted in. The list is as follows:

Cruise of the Cachelot.....	Bullen
The China Clippers.....	Lubbock
The Brassboulder.....	Bone
Treasure Island.....	Stevenson
Two Years Before the Mast.....	Dana
The Colonial Clippers.....	Lubbock
Westward Ho.....	Kingsley
Round the Horn Before the Mast.....	Lubbock
Sea Songs and Chanties.....	Whall
Typhoon.....	Conrad
Mr. Midshipmen Easy.....	Marryat
Nigger of the Narcissus.....	Conrad
Merchantmen-at-Arms.....	Bone
Log of a Sea Waif.....	Bullen
Wreck of the Grosvenor.....	Russell
Mutiny of the Elsinore.....	London
Captains Courageous.....	Kipling
Mirror of the Sea.....	Conrad
Lord Jim.....	Conrad
The Seven Seas.....	Kipling
Salt Water Ballads.....	Masefield
Voyage of the Sunbeam.....	Brassey
Life of Nelson.....	Southey
Tom Cringle's Log.....	Scott
Grain Carriers.....	Noble
Clipper Ship Era.....	Clark
Sailing Ships and Their Story.....	Chatterton
Broken Stowage.....	Bone
Shadow Line.....	Conrad
Many Cargoes.....	Jacobs
A Tarpaulin Muster.....	Masefield
Moby Dick.....	Melville
Vanity Fair.....	Thackeray
Peter Simple.....	Marryat
A Mainsail Haul.....	Masefield
The Riddle of the Sands.....	Childers
Voyages of Captain Cook, two volumes.	
Men of the Merchant Service.....	Bullen
David Copperfield.....	Dickens
My Life at Sea.....	Crutchfield
Adam Bede.....	Eliot
Naval Occasions.....	Battimeus
Cruise of the Falcon.....	Knight
Almayer's Folly.....	Conrad
Don Quixote.....	Cervantes
Robinson Crusoe.....	Defoe
My Vagabondage.....	Patterson
Les Miserables.....	Hugo
Twenty Thousand Leagues Under the Sea.	Verne
Voyage of the Beagle.....	Darwin

Managing Agencies Go on New Banking Basis

On April 16 at American ports and on May 1 at foreign ports, the Emergency Fleet corporation went on a new financial basis in its relations with its 38 managing agents. Instead of maintaining their own individual bank accounts, the managing agents are now clearing through a limited number of banks designated by the corporation.

In the past, each managing agent has had his own account at his chief port. Subject to the regulations of the corporation, the agent could check at will out of his account. It frequently occurred that at one point, one agent had a surplus of funds while at another port another managing agent would be hard put. The amount of funds so on deposit for voyage expenses often topped \$11,000,000.

Now the treasurer of the corporation is maintaining five accounts in New

York and as many in other ports, the number not yet having been definitely determined. The agents are empowered to draw on these accounts for voyage expenses, subject to the approval of a special disbursing officers of the corporation. It may yet be worked out that the counter signature of a corporation officer may be required.

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties— A Record of Collisions, Wrecks, Fires and Losses

NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING
Artemis	Apr. 12	Disabled	At sea	Lost prop. shaft	Lambton	Apr. 23	Not stated	S.E. of Michipicoten	Sunk
A. Morris (tug)	Apr. 15	Capsized	Near Gedney channel	Sunk	Laketon	Apr. 20	Grounded	Sandwich	Not stated
Arabian	Apr. 26	Grounded	Prescott	Jettis. cargo	Lehigh	Apr. 22	Hit scow	Welland canal	Hole in bow
Aeolus	Apr. 20	Collision	Off Cape Polonio	To bow plates	Lake Stryman	Apr. 21	Grounded	Jacksonville	Undamaged
Andree	Apr. 21	Fire	Erie basin break-water	Heavy Slight	Lillian E. Kerr	Apr. 22	Ashore	Colorado reefs	Not stated
Annie and Reuben	Apr. 21	Collision	E. Boston	Slight	L. H. Washburn	Apr. 17	Gale	Brooklyn	Side stove in
Abbie Keast	Apr. 28	Battered by sea	Bay of Fundy	Leaking	Lottie	May 1	Disabled	Off Watch Hill	Broke crank-shaft
Anna Maersk	May 4	Disabled	Near Newport News	Tail shaft broke	Martha Stevens	Apr. 13	Fire	Norfolk	Total loss
					Mapleheath	Apr. 29	Struck lock	Lachine canal	Bow damaged
Bristol	Apr. 12	Gale	Penobscot bay	Foundered	Martian	Apr. 26	Lost shoe	Fort William	Steering gear
Buxton	Apr. 13	Fire	Norfolk	Total loss	Munizalba	Apr. 22	Not stated	Malao	Badly damaged
Buena Vista	Apr. 15	Grounded	Shrewsbury river	Not stated	Mapledene	Apr. 18	Gale	Halifax	Grounded
Bremerton	Apr. 17	Disabled	Sandy Hook	Steer. trouble	Menominee	Apr. 18	Disabled	At sea	Steerer damaged
B. R. Tower	May 4	In ballast	Grand Turk island	Totally wrecked	Meanticut	Apr. 18	Disabled	Falmouth	Defective machy.
Brave Coeur	Apr. 28	Disabled	Bermuda	Boil. trouble	Marquette and				
Burutu	May 4	Fouled	Lamberts point	Slight	Bessemer No. 1	May 3	Hit bridge	Welland	Not stated
Brewster	Apr. 21	Collision	James river	Sunk	Mayflower	Apr. 28	Grounded	Oak Bluff	Undamaged
Cumberland Queen	Apr. 13	In tow	At sea	Waterlogged	Manning	Apr. 30	Collision	Off Fortwood	Slight
Chicago Maru	Apr. 14	Collision	New Orleans	Slight	Mundelta	Apr. 27	Rammed	Sabine	Below water line
C. A. Black	Apr. 13	Fire	Cleveland	Slight	Mevania	Apr. 27	Rammed	Sabine	Stem
Canadian	Apr. 19	Grounded	Georgian bay	Leaking	Maid of England	Apr. 17	Not stated	Gijon	twisted
Capt. Thomas Wilson	Apr. 20	Grounded	St. Clair Flats canal	Undamaged	Mina Nadeau	May 7	Heavy sea	At sea	Cargo damaged
Crete	Apr. 19	Collision	Erie	Slight	Meline	May 2	Grounded	Galveston	Lost lumber
C. D. Bradley	Apr. 19	Gale	Lorain	Shifted					cargo
City of Valencia	Apr. 17	Fire	Philadelphia	Slight					Not stated
Campello	Apr. 25	Fire	Claremont, Va.	Heavy Sunk	Neptune Line No. 11	Apr. 9	Struck	New York	Hole in hull
Catawameak	Apr. 29	Sprung leak	S. of Monhegan	Sunk	Northern Star	Apr. 25	Grounded	Gulf of Finland	Jettis. cargo.
Carnmona	May 1	Disabled	Gulf of Canso	Lost rudder	Nettie C. Powell	Apr. 27	Disabled	New York	Not stated
Charlot	Apr. 27	Disabled	St. Michaels	Defect. machy.	Nucula	May 2	Collision	River Clyde	Slight
Charles Davenport	May 8	Leaking	Barbados	Headgear dam.	Nervier	May 3	Jammed in ice	Cabot Strait	Drifting
City of San Antonio	May 2	Grounded	Galveston	Not stated	Nacoochee	May 8	Disabled	Boston	Lost prop. blade
Dallas	Apr. 11	Lost anchor and chain	Hampton Roads	Not stated	Omoa	Apr. 14	Collision	New Orleans	Slight
Derblay	Apr. 11	Grounded	Manta bay	Undamaged	Olaf L. Kongstad	Apr. 14	Disabled	New York	Windlass
Dorothy Palmer	Apr. 21	Collision	E. Boston	Not stated	Oxonian	Apr. 20	Disabled	At sea	Rudder
Dallas	Apr. 28	Disabled	Halifax	Machy. dam.	Osage	Apr. 17	Ashore	Grays harbor	stock
David K. Phillips	May 8	Struck object	James river	Slight	Orizaba	Apr. 18	On rocks	Havana	Not stated
Eastern Ocean	Apr. 22	Not stated	Gibraltar	Bow damaged	Pampa	Apr. 15	Disabled	Off Scilly	Machinery
Eastern Dawn	Apr. 18	Disabled	New York	Boil. dis.	Port de Caen	Apr. 26	Disabled	St. Michaels	Not stated
Erholm	May 2	In ice	At sea	Not stated	Quincy A. Shaw	May 3	Collision	Lake Superior	Plates
F. E. Taplin	Apr. 27	Disabled	Duluth	Crank pin loose	Rosedale	Apr. 13	Fire	Norfolk	Total loss
Faraby	Apr. 25	Disabled	E. of Nantucket	Boiler trouble	Rose E. Murphy	Apr. 14	In ballast	Bahia de Cadiz	Wrecked
Fluor Spar	May 8	Disabled	Gravesend	Steerer defect.	Seven Brothers	Apr. 13	Not stated	Yonkers	Sunk
					S. M. Spaulding	Apr. 13	Grounded	Off Liberty	Not stated
Grace Van Dusen	Apr. 12	Sank	W. Quoddy Bay, Me.	Total loss	South Jacksonville	Apr. 14	Grounded	Reedy island	Not stated
Glenclova	Apr. 11	Disabled	N. of Grand Turk island	Prop. blades gone	Shenango	Apr. 19	Gale	Lorain	Shifted
General Currie	Mar. 31	Stranded	St. Pierre harbor	Not stated	Siam City	Apr. 25	Fire	Port Richmond	Heavy to cargo
Gothicstar	Apr. 12	Disabled	Cristobal	Fuel tanks leak.	Stolwyk	Apr. 25	Grounded	Near Abus	Leak. in holds
Glenbrae	Apr. 20	Disabled	Midland	Not stated	Seneca	May 4	Dis. in ice.	At sea	Not stated
Glencova	Apr. 15	Disabled	Charleston, S.C.	Not stated	Sagua	Apr. 25	Grounded	Arrovo	Not stated
Glyndon	Apr. 25	Disabled	Sandy Hook	Not stated	Saratoga	May 5	Not stated	Florida coast	Sunk
Good Luck	Apr. 25	Ashore	Near Norfolk	Slight	Tifton	Apr. 11	Disabled	Vineyard Haven	Windlass
Henry Ford	Apr. 11	Grounded	Essex bar	Structural loss	Trevisa	Apr. 23	Grounded	Toledo	Undamaged
Henry Lee (tug)	Apr. 11	Not stated	Brooklyn	Sunk	Theodore Roosevelt	Apr. 19	Lines parted	Cleveland	Not damaged
Hoover & Mason	Apr. 19	Gale	Lorain	Shifted	Thistlemore	Apr. 26	Ashore	North Berwick	Not damaged
Harriet B.	Apr. 19	Collision	Erie	Slight	Victoria de Larrinaga	May 1	Ashore	Mouchoir Bank	Wrecked
Harraseeket	Apr. 27	Parted hawser	Long Island	Ashore	Ward	Apr. 10	Disabled	St. Michaels	Boil. trouble
Harriet B.	May 3	Collision	Lake Superior	Wreck	Watch Hill	Apr. 6	Disabled	Gulf of Fonseca	Lost. prop.
Hawkeye State	May 6	Ashore	Below Baltimore	Not stated	Western Maid	Apr. 20	Disabled	Norfolk	Total loss
Joyland	Apr. 28	Ashore	Below Clayton	Total loss	W. J. Hanna	Apr. 25	Disabled	Kaiser Wilhelm canal	Rudder dam.
John McCartney	Apr. 25	Collision	Little Current	Leaking	Ward	Apr. 27	Disabled	Balboa	Tail shaft
Kennedy	Apr. 15	Struck	Near Boston	Sunk, raised	Whittier	Apr. 30	On rocks	Bermuda	Boil. defect-ive
Jim Hughes	May 4	Disabled	Lake Superior	Lost wheel	William A. McKenney	May 1	Disabled	Point Arena	Total loss
J. J. Turner	Apr. 30	Collision	Off Fortwood	Sunk, raised	W. H. Waters	Apr. 28	Heavy Blow	Off Cape May	Tail shaft
Justin	May 1	In tow	N.E. of Charleston	Waterlogged	West Carnifax	May 3	Fire	Near Boston	Lost jib
Josephine	May 4	Struck on bar	Near Southport	In bad shape	Yorkton	Apr. 20	Grounded	Hamburg	Heavy to cargo
Josephine									
Kewanee	Apr. 14	Adrift, col.	New Orleans	Slight	Zero	Apr. 20	Collision	Off Cape Polonio	Sunk
Kelbergen	May 1	Disabled	Rotterdam	Steerer dis.	Zebedee E. Cliff	Apr. 20	Disabled	Charleston	Rudder head twisted

Keeping Record of Ship Due dates

Annual Inspections, Surveys, Etc., Require Some System To Save Time in Checking Earlier Reports

BY PETER AIKENS

AN OVERABUNDANCE of ocean tonnage has induced competition to the extent where the shipowner and his assistants must lie awake nights and evolve practicable plans whereby the ships may operate at the point of greatest economy. Not only is the possibility of eliminating expenses applicable to the actual operation of the vessels; but considerable lost motion takes place in marine offices which might be eliminated by instituting a few systematical charts, such as the accompanying one.

To exemplify the chart, it is assumed the company arranges for each steamer to drydock once in eight months, to clean and scale boilers once every four months, to hold United States steamboat inspection annually, and to undergo Lloyd's surveys on hull, tail shaft, machinery and boilers.

Generally, the only office record of previous drydocking and inspections is contained somewhere in the files. Thus, in the offices of a typical company, it occurs one morning to the

marine manager that maybe the steamer, JOHN BERIAULT is due for United States steamboat inspection in a month or so. However, he is not sure of this; perhaps it is another boat, the steamer ZEPHYR.

At any rate, he rings the bell for an assistant and says, "Harry, I have an idea that the BERIAULT is about due for the U. S. inspection. Please hunt through the files and find out just what the due date is."

"Alright, sir," Harry answers and returns to his desk where he pores over the files for a year back in search of the certificate granted upon completion of the last survey. And not infrequently does he pause, by way of diversion, to read letters bearing on other matters; or to ponder over the misfortune of one first mate who has been discharged on a charge of insobriety. In the end, provided the filing system is worthy of its function, the inspection date is found, but it is conservatively estimated he took an hour to find that certificate. Cases have been witnessed where the clerk

spent half a day discovering the date on which the last steamboat inspection had been carried out.

However, to culminate this train of thought, it is supposed that the company is operating a fleet of 25 ships. To search back records of correspondence in ascertaining the dates of inspections, surveys (four different ones) and drydockings, involves a matter of six hours at various intervals for each ship. For 25 ships, it aggregates 150 hours or three weeks' work.

This does not provide for the clerk, who upon being asked for the same information two weeks latter, finds that it has slipped his mind, and it is necessary to turn up the files once more.

The first step necessary to describe the most satisfactory method of preparing the chart is to draw the outline, then ink in the headings, and down the side fill in the list of steamers comprising the fleet. Ink in, for each vessel, the due dates for United States steamboat inspection and Lloyd's surveys, because the date

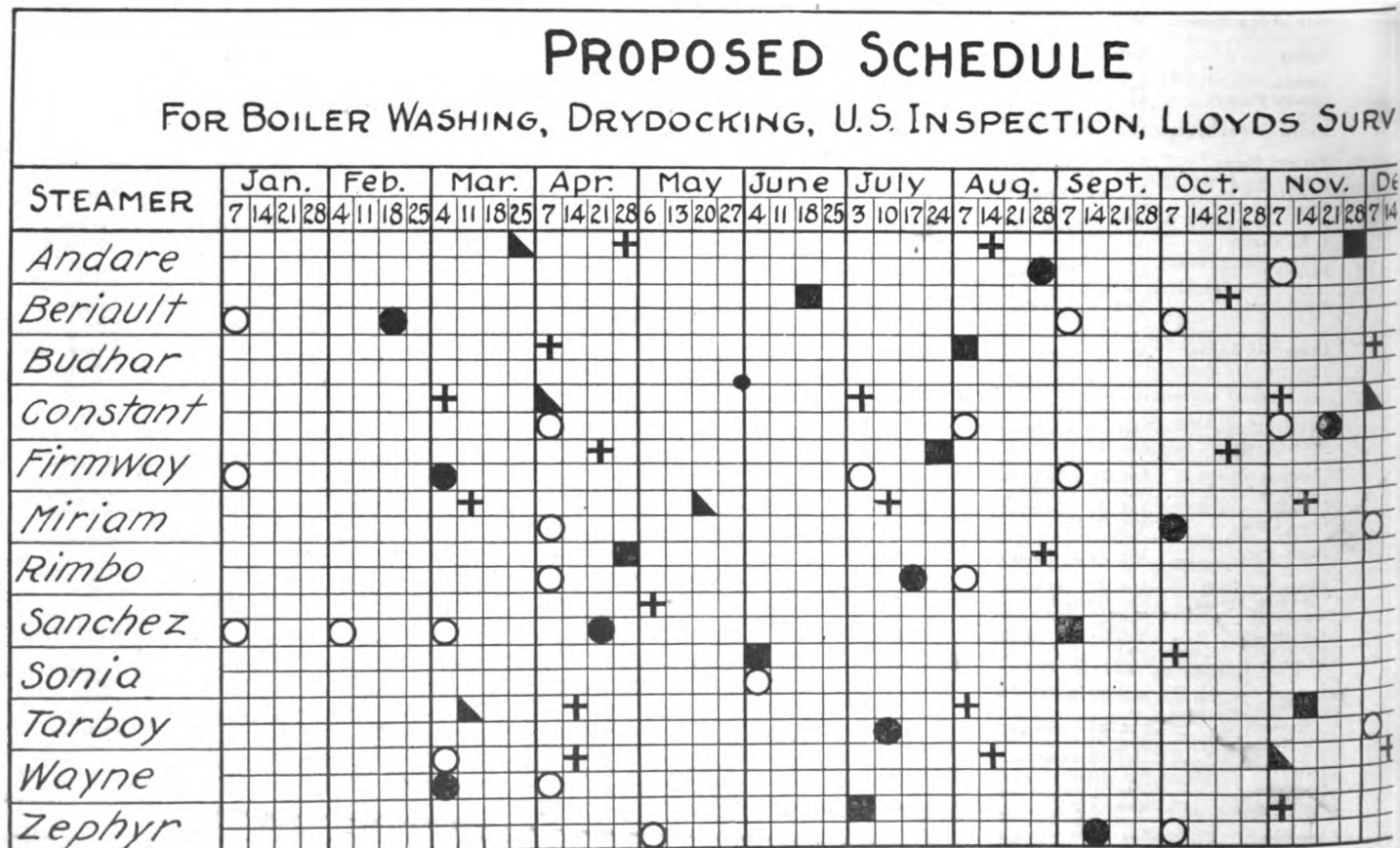


CHART USED BY ONE LARGE SHIP OPERATOR FOR SAVING TIME IN RECORDING INSPECTIONS.

of these surveys seldom vary, and hence will not need to be changed on the chart. Next, ink in a circle representing each date, in the month provided for it.

If the company possesses a blue printing outfit, the chart could be prepared to this stage on linen and a vandyke taken of the form as it now stands. Otherwise, if drawn on paper, it is most satisfactory on bristol board, and this marks the completion of work in ink.

In pencil, print in the time and place when the vessel last was dry-docked and the date boilers were last washed; and from this data proceed to lay out when the next drydocking and boiler washings will be due, allowing eight months for drydocking and four months for boiler washing, or whatever interval may be the company's policy.

Rather than use the plain, black symbols for drydocking and boiler washing, as per the example, it is better to use, say a red pencil circle for boiler washing only; a green pencil circle for drydocking only; and a blue pencil circle for boiler washing and drydocking combined, as the color renders selection more simple.

The reason for putting these marks in pencil is that in practice, schedules will often be altered, to suit the convenience of the boats, for drydocking or boiler washing; and when such a

thing occurs, it simply necessitates erasing the pencil marks and plotting out the new schedule. For the same reason, drydocking and boiler washing dates are inserted in pencil, so that the old dates may be replaced by the latest ones, with a minimum of difficulty in erasure.

The chart itself will last as long as the paper on which it is drawn; it is simply a matter of correcting it as changes occur. A good plan is to place it in the hands of one person whose duty it will be to advise the proper authorities when various vessels become due for attention.

The traffic manager can also use the chart to advantage in laying out future voyages, for he can ascertain from the chart when to make allowances in port for the carrying out of various items as they come due, when he is preparing his layout for future trips. This eliminates the embarrassment when the traffic manager has allowed only sufficient time for handling cargo in a port, and it is found that United States inspection is due and must be carried out, thus throwing his whole layout back a number of days.

The preparation of a schedule such as this requires no skill in drafting; whether the lines are somewhat crooked and the printing a bit off key, the principle remains the same

and the information is as readily obtainable.

The chart itself as suggested is not theoretical. It is the result of two years' development and use in the marine department of a large company operating over 80 steamers, and of another company with 25. Whether the fleet comprises five or 50 vessels, the chart will prove a time saver.

The chart will take care of Lloyd's surveys, for example, which, are as follows:

(1) Special surveys, including hull, machinery and boilers, come at intervals of four, eight and 12 years, and are known as No. 1, No. 2, and No. 3. Four years after No. 3 special survey, comes No. 1 again and so on.

(2) Special surveys of boilers, annually after six years.

(3) Tail shaft, examined annually and drawn at intervals of two years, or three years if liner is continuous. On the application of owners, the committee is prepared to give special consideration to certain cases.

(4) Boilers and machinery of all steamships are to be surveyed annually if practicable, and submit to special survey upon the vessel undergoing the special periodical surveys, No. 1, No. 2, and No. 3, unless the machinery or boilers have been specially surveyed within a period of 12 months.

KEY TO SYMBOLS

BOILER WASHING \oplus BOILER WASHING U.S. INSPECTION \bullet
 DRYDOCKING ONLY \blacksquare AND DRYDOCKING LLOYD'S SURVEY \circ

C.	LAST DRY DOCK		BOILERS LAST SCALED	U.S. INSPECT- ION DUE	LLOYD'S SURVEYS					REMARKS
	TIME	PLACE			DRAW TAIL SHAFT	HULL	MAIN ENGINES	MAIN BOILERS	DONKEY BOILERS	
2128	July 28/ 7/21	Morse New York	Dec. 3/21	Aug. 31	Nov. 23	Nov. 25 #1	Nov. 25	Nov. 22	Nov. 22	
	Oct. 13/ 7/21	Bethlehem Frisco	Feb. 4/22	Feb. 19	Jan. 22	Oct. 24 #3	Sept. 23	Sept. 23	Sept. 23	
	Dec. 3/ 7/21	Panama	Dec. 7/21	Not Under	Not Seaworthiness	Certificate of Issued Dec. 12/1921				
	Aug. 7/ 7/21	Robins New York	Nov. 5/21	Nov. 19	Apr. 22	Nov. 23 #2	Aug. 22	Aug. 22	Aug. 22	
	Jan. 22/ 7/22	Yarrows Esquimaux	Jan. 25/ 7/22	Mar. 7	July 23	Jan. 26 #2	Sept. 22	Sept. 22	None	Charter Calls For Boiler Washing Every Three Months, Dry Docking Every Six
	Sept. 21/ 7/21	S. I. S. Co N.Y.	Nov. 1/21	Oct. 3	Dec. 24	Apr. 25 #1	Apr. 22	Apr. 22	None	
	Aug. 29/ 7/21	Alabama D.D. Co. Mobile	Jan. 3/22	July 17	Aug. 23	Apr. 22 #3	Sept. 22	Sept. 22	Sept. 22	
	Jan. 5/ 7/22	Panama	Jan. 7/22	Apr. 21	Jan. 23	Feb. 22 #2	Mar. 22	Mar. 22	Mar. 22	
	Oct. 6/ 7/21	Valparaiso	Feb. 7/22	Not Under	June 23	June 24 #3	June 22	June 22	June 22	
	July 12/ 7/21	Bethlehem Frisco	Dec. 13/ 7/21	July 10	Dec. 22	Dec. 22 #2	Dec. 22	Dec. 23	None	Vessel Out of Commission New Schedule When Starts Operating
	Mar. 1/22	Robins New York	Dec. 12/21	Mar. 8	Mar. 25	Apr. 23 #1	Mar. 22	Mar. 22	Mar. 22	
	Nov. 3/ 7/21	Vickers Montreal	Mar. 1/22	Sept. 13	Oct. 22	May 25 #2	May 22	May 22	May 22	

SURVEYS, BOILER WASHINGS AND DRYDOCKING FOR THE INDIVIDUAL SHIPS OF HIS FLEET

How To Choose Your Ship Propelling Equipment

By J. E. P. Grant, Chief Engineer, Merchant Shipbuilding Corp.

To the Editor:

While no particular type of propelling machinery is best for all kinds of ships, yet certain types of propulsion may be recommended according to the trade in which the ships will be engaged. The trade will decide the size of the ship needed, the speed and length of the voyage.

Recently the diesel engine has come to the fore with a vengeance, and no prospective shipowner, requiring power up to say 4000 indicated horsepower, can afford to overlook the possibilities of the diesel engine.

The fuel oil consumption per horsepower is about one-third that of a steam engine, either reciprocating, turbine, or electric. The room necessary is no more than that for a regular steam installation.

In addition to the saving in fuel oil consumption, a considerable saving is made in cargo space and weight over long voyages. On two similar ships, one diesel and one steam, in a trade where the fuel oil requirements are 1500 tons for steam, only 500 tons would be required for diesel, a net saving of 1000 tons.

For long voyages, the diesel engine has arrived and will do more than any other single factor to reduce the cost of operation.

The selection between steam and diesel drive depends almost entirely on the respective initial cost of these installations. One of the factors charged to operating costs is "fixed charges" which is working 24 hours a day whether a ship is tied up or running.

Diesel engine prices in the United States are very high yet, and this, of course, decreases the range of desirability of this type of engine.

Where to draw the line between steam and diesel drive requires special study of the particular trade in view. Generally speaking, I would say that for power up to 4500 (diesel) indicated horsepower, and for voyages of 4000 miles and over, the diesel engine is preferable. For higher power and below 4000 miles, steam should be selected.

The minimum distance of voyage mentioned above will decrease as the costs of diesel engines come down.

Should it be decided that we are to have a merchant marine in keeping with our importance in world affairs, it looks as though American firms are in a particularly advantageous position with regard to type of propelling equipment, in that they are not loaded up with a

lot of obsolete steam engine driven ships.

The above remarks do not in any way apply to tankers, as the trade is entirely different in that a boiler is necessary at all times to get steam for heating the cargo oil. Also the saving claimed for the diesel engine in regard to fuel oil consumption is to a great extent minimized by the tanker being able to obtain fuel oil at a very low price, so that saving in fuel oil on a tanker does not mean as much in dollars and cents as on a ship which is not trading to the oil fields.

Electric cargo handling machinery is now with us and while it costs a good deal more than steam driven machinery, it is so much more economical in operation as to justify its adoption in most cases. Unfortunately, the trade that is best suited for diesel engine drive is not the best suited for electric deck machinery, because to make comparison between the two, favorable to the electric winch, it is necessary to use the deck machinery frequently. The long voyage trade that shows up the diesel engine to advantage does not permit the opportunity to operate the cargo winches to the same extent as a short voyage trade.

New Harriman Company Organized

The Atlantic Mail Corp. has been organized as a subsidiary of the American Ship & Commerce Corp., to operate the RESOLUTE and RELIANCE formerly owned by the Royal Holland Lloyd line. C. C. Wardlow, assistant to R. H. M. Robinson, president of the United American lines, has been made secretary and a director of the new organization.

Thomas Plant, manager, and Samuel Mills, port engineer for McCormick, McPherson & Lapham, San Francisco, have perfected a direction indicator, which has been installed on nine vessels of the Matson Navigation Co. The system is designed to remove chance of mistake occurring when orders are transmitted from bridge to engine room.

A deficit of \$174,262 in the first quarter this year is reported by the Eastern Steamship Lines. Of this \$63,846 was shown for March. The March loss was \$16,195 less than that of the same month last year and the quarter's deficit compares with a loss of \$232,265 in the first three months last year.

Payable June 1 to shareholders of record May 10, the New York Shipbuilding Corp. has declared a quarterly dividend of 50 cents a share. Previously the rate has been \$1 per share.

Urges Motorships Be Used in Merchant Fleet

Adoption of internal combustion engines for merchant ships recently was urged by W. S. Benson, commissioner of the shipping board, in commenting on the performance of the WILLIAM PENN upon completion of a voyage around the world. It is claimed she made the 30,000-mile trip without expending a penny for repairs, except \$70 for a broken bed plate on a deck winch. She is a motorship operated by the Barber Steamship lines and left Savannah last September with 10,000 tons of cargo for Japan. She is of 12,375 tons deadweight.

"The expenditure of fuel was only 13½ tons of fuel oil per day when steaming at regular speed of a little over 11 knots," said Admiral Benson. "The personnel was a little more than two-thirds of what she would have carried had she been under steam. Ordinarily she would not have shipped such a large personnel but it being her maiden voyage a greater number than was needed was carried in order to avoid possibility of a crew shortage as well as to have a larger number of men of experience in handling a ship of this character."

Pittsburgh River Traffic

In April, the rivers in the Pittsburgh district carried a total of 725,814 net tons of freight. The coal strike was responsible for the sharp drop, as the March total of 2,096,906 net tons included 1,793,566 net tons of coal. In April only 336,660 net tons of coal were carried, a loss of 1,456,906 net tons. The traffic on the three rivers in April was as follows:

Commodity	Net Tons. Allegheny river	Monongahela river	Ohio river
Coal	23,272	219,588	93,800
Coke	805	20,005	.....
Gasoline .....	.....	810	200
Gravel	139,866	54,350	10,400
Packet cargo .....	.....	.....	5,364
Sand	48,860	73,905	15,085
Unclassified	33	16,621	2,850
Total	212,836	385,279	127,699

To Finance Shipbuilding

Stockholders of the Atlantic Gulf & West Indies Steamship Lines were to meet May 23 to authorize \$1,800,000 6 per cent 5-year gold bonds and first preferred trust indenture of the mortgage upon the steel tank steamships AGWISTONE and AGWISMITH. The proceeds will be used to finance the balance due builders of these steamships.

A total of \$175,000 in federal funds is available to dredge the channel at Gulfport to 23 feet and the work will begin shortly.

Activities in the Marine Field

Latest News from Ships and Shipyards

Order Two 13,000-Ton Lake Freighters

BY MYERS L. FEISER

NAVIGATION on the Great Lakes is on in earnest. Boats are plying the waters with greater frequency than seemed likely two months ago when business had not started to improve. The upturn in steel has had its effect and more boats are going into service. The season's prospects have brightened almost daily since the middle of March. More steamers are being placed for grain loading. Coal movement, due to the miners' strike, has taken a reverse action and considerable fuel has been shipped from the head of the lakes to points where shortages were reported. Ore mines have spurred into action, some working full time, bringing business to the ore carriers. Operators report miscellaneous freight is appearing in good tonnage.

Lake shipbuilding has taken its expected revival. The absence of new construction for lake service for five years has made necessary the replacement of old tonnage and has made certain for months that lake shipbuilding would revive before the coast plants received business. New contracts just let are by Herbert K. Oakes, Cleveland, to the American Shipbuilding Co., Cleveland, for a 13,000-ton bulk freighter and by the Kinsman Transit Co., Cleveland, to the Toledo Shipbuilding Co., Toledo, O., for a vessel of the same capacity. The Oakes steamer will be 604 feet over all, 584 feet between perpendiculars, 64 feet beam and 33 feet depth. She will be delivered next spring, probably from the Lorain, O., yard. She will be operated by the Franklin Steamship Co., to replace the B. F. BERRY, sold to Canadian interests. The Kinsman vessel will be delivered next spring. The contracts previously reported include the Wilson Transit vessel building by the Great Lakes Engineering Works for delivery in September and the self-unloader building by the Manitowoc Shipbuilding Co., for delivery in September. On the Canadian side, the Port Arthur Shipbuilding Co., will deliver a bulk freighter to the Mathews Steamship Co. this fall and a number of small canal size steamers are being built along the St. Lawrence. Other shipbuilding contracts are nearly closed. The two passenger liners are still open while at least two and probably several more bulk freighters are likely to be ordered.

Capt. Matthew Mulholland died at Cleveland. He was known throughout the Great Lakes, having spent 42 years with the Bradley steamship interests.

Conforming to the new policy of the Great Lakes Transit Corp. to fuel its own ships, the company has bought the fuel lighter TOLEDO from the Pitts-

Lake Operators Meet

ANNUAL meetings of the Lake Carriers' association and the Great Lakes Protective association, adjourned from January, were held at Detroit April 27. Improved sentiment since January was evident in the discussions of the lake operators. Reports by officers and special committees and the annual election marked the two meetings.

William Livingstone, president; John S. Ashley, vice president; H. D. Goulder, general counsel, and George A. Marr, secretary and treasurer, were re-elected by the Lake Carriers. A. E. R. Schneider, Cleveland, and J. C. Evans, were added to the executive committee. Mr. Evans and Capt. R. W. England were made directors. The advisory committee of the Great Lakes Protective association was re-elected. John S. Ashley, chairman of the committee, reported a profitable year.

burgh & Lake Erie Coal Co., Erie, and has transferred the lighter from Erie to Buffalo. The TOLEDO has 1000 tons capacity, is a self-unloader and will continue under command of Capt. Steven Hogan.

Package freight steamers of the Canada Steamship Lines, Ltd., will make regular sailings between Cleveland and Montreal, calling at Hamilton, Toronto and other ports, according to J. L. Hughes, general agent for the line.

A maximum draft of 19 feet is recommended in a notice sent out by George A. Marr, secretary of the Lake Carriers' association, for both up and down loading for St. Mary's river, Detroit river, and Lake St. Clair, and the harbors of Fairport, Ashtabula, Conneaut, and Buffalo, including Main river and Blackwell canal.

After having undergone repairs at the Cleveland yard of the Great Lakes Towing Co., the tug OHIO has returned to Fairport, the tug PENNSYLVANIA to Lorain and the tug SANDUSKY to Huron.

With the amount of damages to be fixed later, judgment has been given the Great Lakes Steamship Co. by Justice

Middleton at Toronto against the Maple Leaf Milling Co., Toronto. The line's steamer JOHN DUNN JR., has been damaged at the Maple Leaf elevator at Port Colborne.

Negotiations are reported under way for purchase by the United States Steel Corp. for the American Bridge Co. of the McDougall Duluth Shipbuilding Co.'s plant at Duluth. It is stated the property would be used as a fabrication plant by the American Bridge Co. It is estimated the price will be between \$6,000,000 and \$10,000,000.

Chief engineers John Skelly, George Arnold, M. B. Sturtevant, J. F. Walsh, M. Toner, and A. W. Armson have been retired by the Pittsburgh Steamship Co. Succeeding them the company has promoted the following assistant engineers to be chief engineer: Kirby Brake, C. H. Savage, W. C. Stolp, P. Christensen and D. Bourlier.

John Anderson, steward of the steamer W. E. FITZGERALD, died suddenly aboard the ship at Toledo April 20. He lived at Milwaukee.

The self-unloading steamer being built by the Manitowoc Shipbuilding Corp., Manitowoc, is to be operated by a new company recently organized as the Rockport Steamship Co. Peter Reiss of Sheboygan, is president. The boat will be named the JOHN A. KLING in honor of the president of the Kelley Island Lime & Transport Co.

As late as May 10 two boats, the tug MYSTIC and the scow POWERFUL, were stuck in the ice near Duluth.

Capt. Frank Rice of Cleveland, who retired recently after 27 years service with the fleet of the Pittsburgh Steamship Co., sailed early in May for England for a visit.

The steamer J. J. TURNER lost her wheel in Lake Superior and was towed to Detroit by the QUINCY A. SHAW where she unloaded her ore cargo. The QUINCY A. SHAW proceeded to Cleveland.

The Lumber Carriers association, through its president, O. W. Blodgett, recently announced a reduction in wages of \$5 per month for all unlicensed men, meeting the schedule of the lake carriers announced a short time previously.

The Detroit & Cleveland Navigation Co. has announced a reduction of rates for carrying automobiles. The reduction is 15 per cent on open cars and

25 per cent on closed cars. The announcement was made by A. A. Schantz, president and general manager of the line.

* * *

While enroute from Buffalo to Toledo, the steamer EDWARD U. DEMMER broke her crank shaft 30 miles out of Conneaut. The tugs NEW YORK and VERMONT towed her to Ashtabula.

* * *

Beached at the Tift farm near Buffalo in the gale of Dec. 18, the steamer HURLBUT W. SMITH was released finally on May 12.

* * *

The steamer J. T. HUTCHINSON

rammed the tug ANNIE MOILES in the St. Clair river off Tashmoo park early in May. The tug sank in 15 minutes. Her crew was rescued. A heavy fog was blamed for the accident.

* * *

The United States lake survey reports the monthly mean stages of the Great Lakes for the month of April, 1922, as follows:

Lakes	Feet above mean sea level	
	March	April
Superior	601.35	601.45
Michigan-Huron	579.40	579.93
St. Clair	573.96	575.08
Erie	571.39	572.35
Ontario	245.08	246.06

north Pacific ports and northern Europe has been so successful during the last winter that plans are in the making for handling a still greater quantity of this cargo next season. Shipment of apples by the Panama canal route was much of an experiment this year but reports from British ports state that fruit arrived in splendid condition.

* * *

Should congress pass the legislation needed by American shipping, Seattle capital may be placed in a \$25,000,000 corporation for the purpose of operating a large fleet of cargo carriers from Pacific ports. This announcement has been made by William Pigott, Seattle steel manufacturer, who represented Seattle shipping interests at recent hearings in Washington.

* * *

A delegation of business men of Seattle and the Northwest went to the ninth annual National Foreign Trade convention in Philadelphia, May 10, 11 and 12 in a special car leaving Seattle May 5. An invitation was carried by the delegates to take the 1925 convention to Seattle.

* * *

The heaviest inward cargo yet carried by any of the five shipping board's 535-foot liners operated in the trans-Pacific trade out of Puget Sound by the Pacific Steamship Co., was brought by the steamship PINE TREE STATE which recently completed her second round trip. Her cargo consisted of 5500 tons of general freight, including 2000 bales of hemp from Manila and silk shipments. The PINE TREE STATE carried 168 passengers. Between Manila and coastal ports of China and Japan every available cabin accommodation was taken.

From the Northwest

THE Grays Harbor port commission expects that all its terminals will be completed and railroad connections made by August. The bark JOSEPH DOLLAR was the first vessel to load at the public wharves, on which about \$350,000 has been spent. The port recently purchased a lumber handling crane for \$27,-875 from the Colby Steel & Engineering Co.

* * *

Increasing traffic across the North Pacific has called attention of government officials to the need of double tracking the northern lanes. Ship masters have reported several near collisions recently and plans are now being made for an international agreement for following different courses eastbound and westbound.

* * *

Idle government tonnage at Seattle is increasing as operating companies turn back shipping board vessels. In addition to nearly 50 wooden hulls anchored at Seattle, 16 large steel cargo carriers and one steel tanker, belonging to the government, are in the tie-up at Seattle.

* * *

According to recent estimates Pacific Northwest ports are shipping lumber to the Atlantic coast by water at the rate of 50,000,000 feet a month. The present year is expected to establish a new record of lumber shipments via the Panama canal.

* * *

On a bid of \$135,000, the shipping board recently purchased the 8800 ton steel government freighter WEST HARTLAND when that vessel was sold at trustee's sale. The Shipping Board bid in the steamer to protect its interests. Astute shipping men like Capt. Robert Dollar, refused to offer more than \$100,000 evidently considering that figure the maximum value of the freighter under present conditions. The WEST HARTLAND has been in legal difficulties for the last year since she collided with and sank the passenger steamer GOVERNOR in local waters. Libel actions against the vessel and the government aggregate \$2,-500,000.

* * *

Placing Portland's waterfront on an open shop basis, members of the Waterfront Employers' union and union longshoremen are engaged in a bitter fight.

Nonunion labor is being employed. The employers are offering the following wages: Hatchtenders, boom men, and winchdrivers, 90 cents an hour; longshoremen 80 cents and truckers 70 cents. Longshoremen at Vancouver, B. C., are discussing a strike following announcement of imminent reduction of the wage scale.

* * *

Olympia, Wash., is considering the advisability of organizing the Port of Olympia for the purpose of providing necessary harbor improvements and fostering deep sea commerce.

* * *

The movement of apples in refrigerator ships by the all water route between

In the North Atlantic

THE United States lines is sending the liner AMERICA on two special trips to Italian ports by way of Cherbourg. Exceptional travel demands are developing on the Italian run so that the liner will be sent in that route on her trips from New York starting May 20 and June 24.

* * *

New York reports early in May were that about 400 ships were laid up in British ports on May 1. On Jan. 1, the number of idle British ships was 600.

* * *

Waiting barge shipments when the state canal opened May 1 totalled about 20,000 tons. Ten fleets were ready for the opening. Westbound shipments included 3400 tons of sugar for Milwaukee, which will make the through trip at a saving of 30 per cent over rail charges, and 2400 tons of crude sulphur for Buffalo which were transhipped at New York from Galveston.

* * *

The steamer ROBERT DOLLAR of the Dollar Steamship line reached New York in the closing days of April with a full

cargo, an exceptional record for a ship of her size, 16,000 tons deadweight. She had completed a round the world voyage which took five and one-half months, during which she visited dozens of ports and handled about 35,000 tons of freight.

* * *

Officers for the ensuing year recently were elected at the annual meeting of the New England Dry Dock and Shipyard Repair association as follows: E. P. Robinson of the Atlantic Works, president; F. H. Lally of the Fore River plant of the Bethlehem Shipbuilding Corp. vice president; C. L. Service, Boston Engineering Co., treasurer; and Henry Morgan, secretary, and Jens Bertelsen of Peterson Engineering Co., and R. T. Green of R. T. Green & Co., executive committee.

* * *

Steamship accountants in Boston have formed the New England Steamship Accountant's association, and announce the election of the following officers: President, J. H. Keane of C. H. Sprague & Co.; vice president, H. B. Kendall of the North-Atlantic & Western Steamship Co.; secretary, R. V. Twombly of Rogers & Webb; treasurer, H. N. An-

derson of the New England Fuel & Transportation Co.; and chairman of the executive committee, J. H. Nold of the Coastwise Transportation Co.

A dredge tender to be known as the WATCOOSA is at present under construction at the yards of Richard T. Green Co.'s plant No. 1, Chelsea, Mass. The WATCOOSA will be used by the government in the quartermaster's corps at North Carolina.

It is announced that the New Eng-

land Oil Refining Co. has under consideration the construction of a fleet of ten oil tankers of special construction which will be put in the Venezuelan service. According to report, the steamers will be 350 feet long.

The schooner PURITAN was recently launched at Essex, Mass. The PURITAN is 139 feet over all and 106 feet on the waterline, 29.6 feet wide with a 12-foot depth of hold. It is announced that she will challenge for the international fishing vessel trophy this year.

of the Virginia general assembly, Gov. E. Lee Trinkle has appointed the Hampton Roads Port commission, which is as follows: N. D. Maher, five years; H. L. Ferguson, four years; Henry G. Barbee, three years; W. M. Martin, two years, and W. E. Carson, one year. John R. Saunders, attorney general of Virginia, is an ex-officio member.

The Dismal Swamp Canal Co. has offered to sell the canal to the government for \$500,000, and unless the government accepts the offer, it is likely the canal company will have to abandon this waterway. This canal will have to go out of business because the government has opened the Albemarle-Chesapeake canal, a competing project, and is operating it free of toll charges. Both of these waterways serve practically the same territory, although the Dismal Swamp canal's territory is somewhat broader and larger than its competitor. The value of the canal is said to be considerably more than \$1,000,000.

According to the figures of the bureau of foreign and domestic commerce, tobacco exports from Hampton Roads last year were three times as valuable as the exports of coal from the port and of a value 10 times as great as that of the cotton which was shipped to foreign countries. Exports of a value of \$197,104,338 were handled during the calendar year 1921. Of this tobacco exports covered \$135,196,063.

From the South Coast

NORFOLK will have two union terminals to handle export and import traffic when tariffs published by the Norfolk & Western railroad, opening its two newest piers, used during the war as the army engineers' depot, become effective May 26. The new arrangement will permit cars from other roads to be switched into the terminals, the switching charges to be absorbed by these lines as at the municipal terminal.

Contract for construction of Norfolk's new municipal grain elevator has been awarded to A. M. Crain & Co., Chicago, whose bid of \$639,900 was the lowest of six offers, when time of completion is taken into consideration. Work is to start at once.

Norfolk is one of the leading oil bunkering stations on the coast. The Standard Oil Co. is operating a large fuel oil station in this port, as is the Texas Co. and the Mexican Petroleum Co. The shipping board's new station has been in use some time.

Entrances and clearances through the Norfolk custom house for April show a substantial increase over the preceding three months of this year, indicating general revival in business through the port. Both cargo and bunker vessels materially increased.

Capt. John W. Inglesby, manager of the Inland Steamship Co., and Leslie Voight, office clerk, had a narrow escape from death April 28, when the tug DIRECTOR, of Southgate & Co., rammed the offices of the company on Southgate terminal, Norfolk.

A libel for \$175,000 against the shipping board steamer LAKE STIRLING, was filed in federal court at Norfolk April 29 by J. R. Barret, master of the steamer BREWSTER, sunk in collision with the LAKE STIRLING. The BREWSTER was sunk in the James river April 21 and is a total loss. C. W. Hussey, chief engineer, of the BREWSTER, lost his life in the accident and several members of the crew were injured.

Two members of the crew of the coast guard cutter MANNING were badly injured and five others hurt less seriously when the cutter April 30 collided with the Booth line passenger steamer JUSTIN off Old Point. A hole 6 x 10 feet was

stove in the starboard side of the British steamer about 50 feet forward of the stern. The MANNING's stem was badly bent.

Hampton Roads coal piers dumped 1,409,430 tons of coal in April, which was less than 90,000 tons below the high record for the year set in March, and was 150,000 tons above the record for April of last year.

By authority of port development legislation, enacted by the last session

On Californian Shores

LARGE numbers of automobiles are reaching California by water from auto manufacturers having plants near the Atlantic seaboard. During the last week in February and the first week in March, 48 automobiles, mainly touring cars, reached San Francisco by steamer via the Panama canal, and a similar number arrived at San Pedro.

The California state board of harbor commissioners has named the new state harbor launch, WILLIAM D. STEPHENS, in honor of the present governor.

The Toyo Kisen Kaisha Co., operating steamers out of San Francisco to South American and Oriental ports, has found that it cannot collect damages from the state for damage to goods. The steamship company presented a bill to the state harbor commissioners for \$123.31 alleging damage to rice caused by rain coming through a broken door on Pier 36. The commissioners notified the company the board is not responsible for damages of this nature.

The United States Public Health service has notified all shipowners at San Francisco that in the future all fumigation of holds will be done with sulphur instead of cyanide. When the holds are being fumigated, the superstructure also will be fumigated with sulphur, as it is dangerous to use both sulphur and cyanide simultaneously on the same vessel. Another precaution will be the installa-

tion of electric blowers to clear the atmosphere, after the fumigation seals have been broken, and before men are allowed to enter the holds.

Matson Navigation Co. has petitioned the California state board of harbor commissioners for permission to establish a modern steam laundry between Piers 30 and 32 on the San Francisco harbor front to be used exclusively in caring for the laundry from the company's own steamers. The chief engineer of the board has approved the request.

The first two pontoons of the 12,000-ton drydock for the Southwestern Shipbuilding Co.'s plant at San Pedro, recently purchased by the Bethlehem interests, were towed from San Francisco bay to the southern California port, early in April by the Red Stack Co.'s tug, SEA MONARCH and the Black Co.'s tug STORM KING.

The Bethlehem Shipbuilding Corp. did a delicate job late in May when it drilled a hole 5½-inch in diameter down the entire length of a 3-inch shaft 17 feet long. The shaft was part of the propeller shaft of the big Danish freighter and training ship KOBENHAVEN, equipped with the largest 2-bladed feathering propeller in the world.

The California state board of harbor commissioners has assigned Piers 29 and 31 at San Francisco to the Luckenbach Steamship Co. and cancelled the as-

signment of Piers 39 and 41. The Associated Terminals has been assigned Pier 46 in place of Piers 29 and 31. The General Steamship Co., China Mail, Transoceanic and Mitsui company also will use Pier 46. The new assignments were effective May 1.

* * *

Repairs to the William line freighter WILLPOLO, which lost her propeller 700 miles north of Balboa, while bound to San Francisco from New York, are being made at Hunter's Point, San Francisco.

* * *

Construction department of the Pacific

division of maintenance of the shipping board was closed May 1, ending the wartime shipbuilding construction program on this coast. The last act of the department was the acceptance of the Chinese built steamer ORIENTAL by the board on April 2. This ship, with four others, also built in China, was purchased by the Robert Dollar Steamship Co.

* * *

The Union Oil Co. tanker WHITTIER, went ashore in a fog on Sounder's Reef, 10 miles south of Point Arena, early in May. The 15,000 barrels of oil on board were lost. Heavy seas prevented early work which might have saved the hull.

Lykes Bros., New Orleans, J. B. Watterman of Watterman & Co., Mobile, and John Quire of S. Sgitovich & Co., Galveston, attended the ship subsidy hearing at Washington.

* * *

The city commissioners of Pensacola ended a long controversy late in April by buying the Palafox street wharf property for \$180,000 and an adjoining area for \$34,700. They will now proceed to erect a municipal dock. Bonds totaling \$400,000 were voted for a municipal dock seven years ago. The business was held up by injunctions by opponents who lost in the Florida supreme court.

* * *

The Jahneke plant at New Orleans has completed repairs on the shipping board steamers EVERGREEN CITY and LIBERTY BELL, and turned them over to the operating agencies, Lykes Bros. and Trosdale, Plant & Lafonta. Repairs to the WEST WAUNA will be finished in a few days.

* * *

Efforts are being made to secure a 20,000-ton shipping board vessel to carry the New Orleans and part of the Mississippi valley delegation to the Brazilian Centennial exposition at Rio de Janeiro next autumn. It is planned to carry large quantities of samples on the ship and to use it as a hotel during the exposition.

* * *

The advice given the shipping board last winter that the 60 vessels tied up in the river above New Orleans would be in no danger from high water appears to have been good as no accidents have occurred to them in the recent flood.

Along the Gulf Coast

IN APRIL, 56,000 bushels of wheat were shipped from Texas City, Tex., according to records of the board of trade of the port. During the present season, the port has shipped 5,235,333 bushels of wheat, 2,720,434 bushels of corn and 119,999 bushels of rye.

* * *

Receipts in the port of Galveston for April amounted to \$465,051.00, the largest sum ever taken in any one month. The previous record month was August 1921 when \$444,000 was collected. This brings the total for the 10 months of the fiscal year to \$2,777,000 also a record in collections at the port.

* * *

Eight shipwrecked sailors from the 4-masted schooner ROSE E. MURPHY of Mobile were taken into Galveston on the steamer LAKE KYTLE from Cardenas, Cuba. The schooner went on a reef between Cardenas and Sagua la Grande. All on board were saved.

* * *

Oil imports at the port of Galveston in April amounted to 1,222,000 barrels of 42 gallons each. Houston also received 154,000 barrels making a total of 1,376,000 for the Galveston district.

* * *

The United Fruit liner ABANGAREZ sustained a rent in one plate and denting of two others above the water line when rammed by the ocean tug ADLER of the River Coal Co., and a 20-foot section of bulkhead was displaced when rammed by another United Fruit vessel, in tow by a Bisso tug, during the highest water ever known on the Mississippi at New Orleans.

* * *

The steamer JAMES MORAN of the Lent Traffic Co., left Pittsburgh May 8 towing two cargo box steel barges with 3000 tons of steel for distribution through New Orleans to Mexican oil fields and Pacific coast ports. President John F. Lent of the company says this is the first tow of a new service.

* * *

Capt. Roy Streckfus of the Streckfus line will take the steamboat CAPITOL back to St. Louis May 14. The CAPITOL spends the winters in the New Orleans harbor as a sight seeing boat and is particularly popular with foreign officers and seamen as they ride free.

* * *

Free time at the wharves in New Orleans has been extended from 48 hours to 96 hours, with special provisions that

avoid penalties in the event of genuine emergency.

* * *

Neal M. Leach, vice president of the J. H. W. Steele Co., and Ernest Lee Jahneke, president of the Jahneke Drydock & Ship Repair Co., attended the convention of the National Foreign Trade council in Philadelphia, May 10, 11 and 12. The Steele company is agent for all the Japanese and a number of other foreign lines at New Orleans.

* * *

N. O. Pedrick, general manager of the Mississippi Shipping Co., Joseph Lykes of

Along the Atlantic Bays

SAMUEL M. VAUCLAIN, president of the Baldwin Locomotive Works, will address the Foreign Trade club of Baltimore, May 19 at the Hotel Emerson. Mr. Vauclain will outline the progress of his company in foreign trade fields and discuss the sales plan being developed for securing both domestic and overseas orders.

* * *

The importance to the trade life of Baltimore of the operations of the American Sugar Refining Co. was officially recognized by a dinner and reception tendered the officers of the company by Baltimore business interests May 5.

Imports of sugar at Baltimore are now averaging 75,000 bags weekly. In a week recently more than 100,000 bags were brought in and the following week 78,782 bags. Sugar reaching Baltimore is now moving inland as well as supplying the new refinery at Locust Point.

* * *

The steamer ALVARADA, first vessel of the new line from Baltimore to west coast of South America, loaded a large cargo early in May. The service is conducted by the Pacific Steam Navigation Co. with Robert Ramsay & Co. as local agents.

* * *

Grain exports from Baltimore continue large. For the week ending April 28, 2,504,726 bushels left port, consisting mostly of Russian relief corn. Total exports for April amounted to 8,864,157

bushels. Flour exports in the same month were 29,848 barrels.

* * *

The Pennsylvania railroad announces that it will shortly enlarge the capacity of its Canton grain elevator to 4,250,000 bushels. When completed this elevator will be the largest on the Atlantic seaboard and will represent an investment of \$5,500,000. The capacity for loading grain into vessels will exceed 120,000 bushels per hour.

* * *

Baltimore's export coal trade showed some activity early in April, three cargoes amounting to 14,141 tons moving out to Egypt and Cuba. During the remainder of the month the business was at a standstill due to depletion of tidewater stocks by the coal strike and the total for the month remained at the above figure.

* * *

The import coffee trade of Baltimore is improving. Three cargoes amounting to nearly 20,000 bags came in during April, the total since Jan. 1 being nearly 45,000 bags. A number of new interior importers are now routing their coffee shipments via that port.

* * *

During April 179 seagoing vessels entered the port of Baltimore, representing 13 nationalities. Norway had 27 vessels followed by Great Britain with 23. American ships number 106 steamers and 2 schooners.

Business News for the Marine Trade

Capitalized at \$200,000 the Milwaukee Steamship Co. recently was incorporated in Delaware to own and operate boats and vessels of all kinds.

John E. Matton & Son, Inc., Cohoes, N. Y., boat building and ship chandlery, recently was incorporated under the laws of New York, with a capital stock of \$100,000 by J. E. Matton, Waterford, N. Y., and others.

Articles of incorporation have been filed by the Zaro Tourist & Steamship Ticket Agency, Inc., New York. The company has a capital stock of \$150,000 and was chartered by H. C. Zaro, 39 Cooper Square, New York.

Swimming appliances, etc., will be manufactured by the Lifeguard Swimming Belt Corp., New York, which was recently incorporated with a capital stock of \$500,000. S. Wise, 2484 Grand avenue, New York, was named among the incorporators.

The General Overseas Transportation Co., Wilmington, Del., recently was incorporated in Delaware with a capital stock of \$100,000 to own and operate boats, etc.

Transportation upon the inland waterways will be the business engaged in by the Inland Waterways Co. which was recently incorporated in Delaware with a capital stock of \$26,000,000.

The A. D. N. Steamship Corp., New York, recently was incorporated with \$15,000 capital stock by R. J. Sykes, M. Roger and W. H. Gillon. Attorney for the company is P. Boyning, 111 Broadway, New York.

The Newport News Shipbuilding & Drydock Co., Newport News, Va., has increased its capital stock from \$12,000,000 to \$26,000,000.

Capitalized at \$150,000 the Murray Harbor Transportation Co., Brooklyn, N. Y., recently was incorporated by J. J. Murray, T. J. Boyce and J. D. Carroll. J. P. Carroll, 189 Montague street, Brooklyn, is attorney for the company.

Articles of incorporation have been filed by the Nidaros Steamship Co., 65 Water street, Baltimore. The company, which is capitalized at \$200,000, was incorporated by E. Garrett Atkinson, 105 Singar avenue, Baltimore; August Olsen and O. Legard Jones.

The Floridian Trading Corp. Steamship Line, Jacksonville, Fla., recently was incorporated with a capital stock of \$150,000. The company was incorporated by Emory C. Meek, president; F. I. Maynard, secretary; E. K. Sharlow, treasurer. The company will operate lines to Havana, Cuba; Porto Rico and Venezuelan ports.

The Union Marine Service Corp., Fairfield, Md., has been chartered with a capital stock of \$300,000, by Rupert C. Cowles, Charles Hoffman and Frank J. Whelan. It is understood the company will engage in ship repair work.

Capitalized at \$30,000 the Commonwealth Motorship Co. recently was organized at Boston to own and operate motorships, etc. Incorporators of the company are Charles N. Fisher, Philadelphia; Samuel Kaun and Louis Schulman, New York.

Ship repair work will be engaged in by the Free State Contracting Co., Brooklyn, N. Y., which was recently incorporated under the laws of New York with \$20,000 capital stock. The incorporators of the company are R. Stephen, J. Nelson and W. J. Vaughan. The company is represented by J. W. Ockford, Jersey City, N. J.

The East Bay Steamship Agencies, Oakland, Cal., recently was incorporated with \$10,000 capital stock by Frank L. Hain, M. W. Dobrzensky and C. Mulvany.

J. J. and B. F. McManus were named as the

Business Changes

D. L. Flack & Son Inc. have been incorporated to engage in the coal trade with offices at No. 1 Broadway, New York. They will also represent the London firm of D. L. Flack & Son. Bunkering coal will be a specialty of the new company. W. P. Anderson, for many years with H. N. Hartwell & Son, later with W. C. Atwater & Co. and recently New York manager of the Flack company of London, is president. W. F. Woods, former secretary of the American Coal Co., which was sold to the Atwater interests, is secretary of the new firm.

Quarters of the Williams line in the Drexel building Philadelphia, have been enlarged.

The Otello & Bitmo Corp., which has been at 23 Park place, New York, moved May 1 to 90 West street, that city.

Offices have been established at Montreal by the W. L. Richeson Co., freight broker of New Orleans, Galveston and New York, active in the export grain business.

B. H. Sobelman & Co., 127 Walnut street, Philadelphia, have been appointed agents at that port for the Columbus Steamship Co. and the American Metals Transport Co.

Detroit offices of the Black Diamond Steamship Co., were reopened May 1. They are at 607 Free Press building, in charge of William H. McCloud.

On May 1, the Interstate Coal & Dock Co. moved its New York offices to 1 Broadway. G. H. Pendleton is eastern sales agent, W. N. Stapleton, chartering agent and F. M. Wattles, manager of eastern sales.

The Williams Steamship Co., Inc., Water, Moore and Front streets, New York, is now using pier 18, Brooklyn, foot of Joralemon street, instead of pier 65, North river. The change gives greater facilities for handling cargoes in the company's intercoastal service.

Announcement is made of the appointment of Mathews & Livingston, of San Francisco, by the Queen Insurance Co. of America as general agents for the Pacific coast of its marine department. The Queen previously operated its marine department under the same management as the Royal Insurance Co. of Liverpool.

incorporators of the Brooklyn Ship Rigging Corp., New York, which was recently incorporated with a capital stock of \$10,000. J. P. McManus, 27 William street, New York, is attorney for the company.

Capitalized at \$100,000, the North River Boat Works, Inc., 1201 River road, Edgewater, N. J., recently was incorporated to build boats and engage in ship repair work.

The New York Sail Making Corp., Brooklyn, N. Y., recently was incorporated with \$20,000 capital stock by F. C. McRoberts, V. J. Spelman and W. G. Saxon. Lee, Aron & Wise, 7 Dey street, New York, are attorneys for the company.

The Arrow Oil & Navigation Co., New York, recently was incorporated with a capital stock of \$60,000 by W. B. Goolsby, E. H. Kendall and R. M. Hill. The company is represented by Attorney W. M. Bennett.

Smith & Terry Navigation Corp. has been incorporated with \$100,000 capital stock by Morris Cooper, Alfred H. Strickland and John Potts, all of Brooklyn, N. Y. The company is represented by Attorney George B. Insley.

The Port Jefferson Shipyard Corp., Port Jefferson, L. I., N. Y., recently took title to the New York Harbor Dry Dock Corp.'s plant. The new owner will operate the yard for building merchant vessels and repair work.

The Detroit & Cleveland Navigation Co., Cleveland, plans to build piers and docks.

Floating docks with electric traveling cranes, will be constructed at the new barge line terminals at Memphis, Tenn., the entire project costing about \$500,000. The project will be carried out by the Memphis board of works and federal government. The general contract for the work has been let to R. W. E. Thompson, Earle, Ark.

The Astoria Steamship Co., Chelsea, Mass., recently was incorporated with a capital stock of \$100,000 with the steamer Astoria, 4560 tons deadweight capacity, as its first vessel. R. T. Green, Brookline, Mass., is president and treasurer of the company.

New Trade Publications

DIESEL ENGINES—An attractive booklet has been issued by the Pacific Diesel Engine Co., Oakland, Cal., in which the progress made in the construction of diesel engines is outlined. The booklet is illustrated. One of the illustrations is that of the Standard Oil Co.'s motorship HARPER, which it is said, is the largest diesel-engined tanker built in the United States. In addition to the technical descriptions, data, etc., the booklet contains considerable general information pointing out the part being taken by diesel engines in maritime affairs.

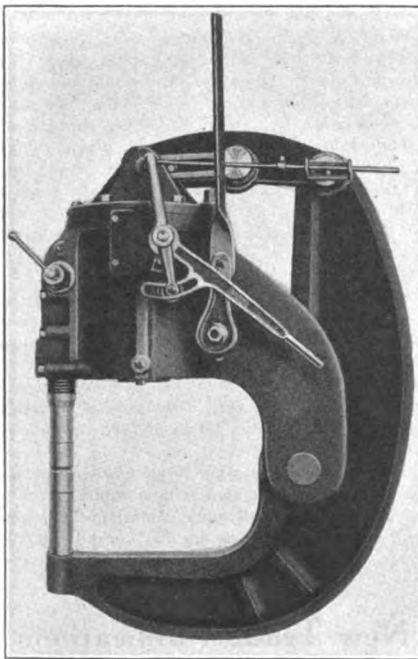
ATOMIZER AND AIR REGISTER—The Peabody Engineering Corp., New York, has published an 8-page illustrated bulletin in which a mechanical atomizer and air register is described. This air register is designed to give absolute control of the air supply under varying load conditions. The shutters are so arranged that they give the air current the correct amount of rotation for all loads, and the register is so arranged that all the shutters may be placed in position to give the right amount of air for perfect combustion by turning a handle.

PNEUMATIC DRILLS—The Independent Pneumatic Tool Co., Chicago, has published a small folder in which pneumatic drills for light work, drilling, reaming, wood boring, screw driving, cleaning, polishing, removing scale, paint or rust are described and illustrated.

Equipment Used Afloat, Ashore

Pinch Bug Riveter—Plate Welder—Helm Indicator—Blower—Safety Hook

FOR light and medium weight structural riveting such as roof trusses, plate girders, plate and channel columns, small plate and angle columns, latticed channel columns, steel car sills, etc., the Hanna Engineering Works, Chicago, has developed a new pinch bug riveter, a feature of which is its range of capacity as compared to its lightness in weight. The reach is 20 inches and the gap is 11½ or 18 inches depending upon whether the short channel jaw or long girder jaw is used. The machine, which is shown in the accompanying illustration,



ALTHOUGH LIGHT IN WEIGHT THIS RIVETER HAS A 50-TON CAPACITY AT 100 POUNDS AIR PRESSURE

weighs 1490 pounds and has a capacity of 50 tons at 100 pounds air pressure.

Due to the long radius from hinge pin to die axis, the angular movement is small, an arrangement which permits greater lower die length variation. The die stroke is 3½ inches. When the machine is suspended with the dies vertical, cylinder up, the upper dies do not move as the rivet is driven. When rivets are cylinder up, the upper dies do not move as the rivet is driven. Rivets are inserted from the top and are driven from below. They may be placed in position in advance. Therefore the "rivet stiker" is able to devote some of his time to drift pins and stitching bolts without interrupting the continuous operation of the machine. The suspension pin, about which the machine is free to revolve, is so located with relation to

the center of gravity, that the riveter, when suspended, naturally assumes a position resulting in the upper die screw being vertical. Proper working suspension is obtained by hoisting the machine to the point where the upper die rests on the work.

Navy Shackles Meet Test

Trial by the bureau of standards in Washington of three test shackles of a model which was made at the Norfolk navy yard has been entirely satisfactory, and the yard has been authorized to proceed with the manufacture of between 300 and 400 of the shackles. The shackles are of 3¼ inch material and are for the anchor chains of the largest naval vessels. They are of a type which will pass smoothly through the hawsepipes and over the drums of the hoisting engines.

Tool Electrically Welds Studs to Plates

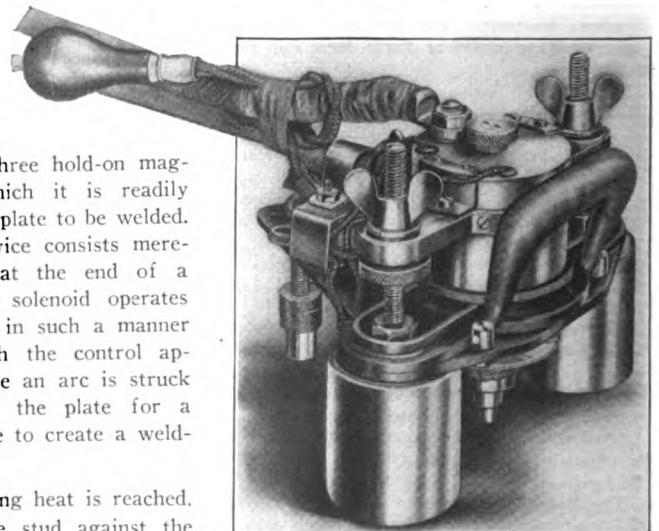
A method of welding studs or pins on to steel plates or other masses of steel using the electric arc process has been developed by Handstock, Ltd., 2 Harewood Place, Hanover Square, London. A feature of the system is that it permits the welding of brass or bronze pins to steel plates. The apparatus was designed originally for use in shipyards for welding electrical conductor clips to bulkheads, frames, etc. Numerous other applications of this process of stud welding have since been developed.

The apparatus consists of a special welding tool, as shown in the accompanying illustration, and a control mechanism both of which are portable, the tool itself weighing only about 20 pounds. The tool is equipped with three hold-on magnets by means of which it is readily fixed in position on the plate to be welded. The actual welding device consists merely of a stud holder at the end of a solenoid plunger. The solenoid operates on an auxiliary circuit in such a manner that in connection with the control apparatus or timing device an arc is struck between the stud and the plate for a sufficient length of time to create a welding heat.

As soon as the welding heat is reached, the solenoid forces the stud against the plate and the welding current being cut off, the desired weld is effected immediately.

The normal current ranges from 200 to 500 amperes according to the size of the stud or other fitting to be welded. The energy consumed per weld is relatively limited the usual duration of the welding current being about a second. The apparatus, it is said, will satisfactorily weld steel, brass or manganese bronze studs up to ½-inch diameter onto brass, manganese bronze, iron, or steel of practically any thickness, and also onto galvanized iron or steel.

Wire rope is described in detail in a 138-page illustrated book published by Robert L. Stillson Co., New York. Under the title "Out-spinning the Spider," the story of wire and wire rope is told entertainingly by John Kimberly Mumford. The book is not a technical treatise. While a fund of information on wire rope manufacture is given, the book primarily is a nontechnical article, telling in an entertaining fashion, the story of wire and its use. Wire has become an indispensable industrial agent. Under the spur of modern need, wire, according to the book, is the pack-bearer of the world and the main-spring of every activity from the cradle to the grave. The building of the Brooklyn bridge and the many obstacles overcome by the Roeblings in its construction are described in detail. An interesting part of the book is the history of the town of Roebling, which was founded by the Roebling interests, and which today is one of the model industrial communities of the country.



AN ELECTRIC ARC DEVICE WHICH AUTOMATICALLY WELDS STUDS

Indicator Shows Angle of Rudder Variance

Adapting precision gun fire control to a ship's rudder has been accomplished by the Sperry Gyroscope Co., Brooklyn, which has brought out a helm angle indicator and with it a helm angle indicator transmitter. The indicator is a visible check upon the accuracy hand of the rudder operating mechanism. The instrument's indicating hand is directly connected to the shaft of a self-synchronous direct current 110-volt motor which is controlled by the transmitter, directly connected to the rudder stock. The dial face of the indicator is of the regulation colored glass to indicate port and starboard and the indications are printed on the glass to show white by day and black when illuminated from behind by an electric bulb provided for that purpose.

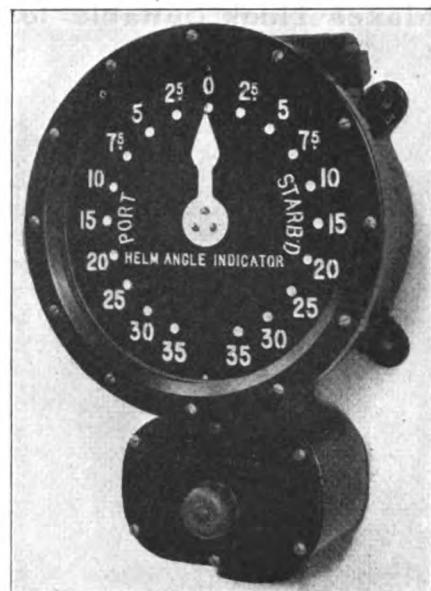
Indications are in units of $2\frac{1}{2}$ degrees up to 10 and from 10 to 35 in units of 5 degrees.

The concentrated light from the electric bulb illuminating the dial is modified by the use of a celluloid shield so that the interior light is diffused and a soft and even illumination of the numerals and markings on the dial is obtained. The extension of the case below the dial, contains a block to which all the wires are led and to which the incoming cable leads are secured. This compartment also contains a special form of switch for

cutting in the light for illumination when needed. Both types of instruments have heavy glass bezels sealed with rubber gaskets and the metal cases themselves are impregnated by the vacuum process with a special lacquer so that they can withstand an internal air pressure test of four pounds for 10 minutes without leaking when submerged in water, which is a naval test for water tightness. The connecting power cable enters the instrument through a stuffing gland which is readily packed to insure complete watertightness.

The lever arm extending from the operating spindle of the transmitter is connected by an extension rod to a similar arm which is clamped or fastened to the rudder stock. The internal parts of the transmitter are designed to meet naval specifications. The particular feature of this instrument is that the cover to which all the operating parts are connected can be removed and all circuits broken without disturbing any wires of cable fastenings in the instrument. The plugs which project from the bottom of the controller fit into corresponding receptacles in the bottom of the case to which the incoming cable wires are led, thus making it impossible to reconnect improperly.

The Sperry company also manufactures a naval type indicator to meet United States navy specifications. This instrument is somewhat similar to the merchant vessel type described.



INDICATOR TO SHOW HELM ANGLE AS USED ON MERCHANT SHIPS

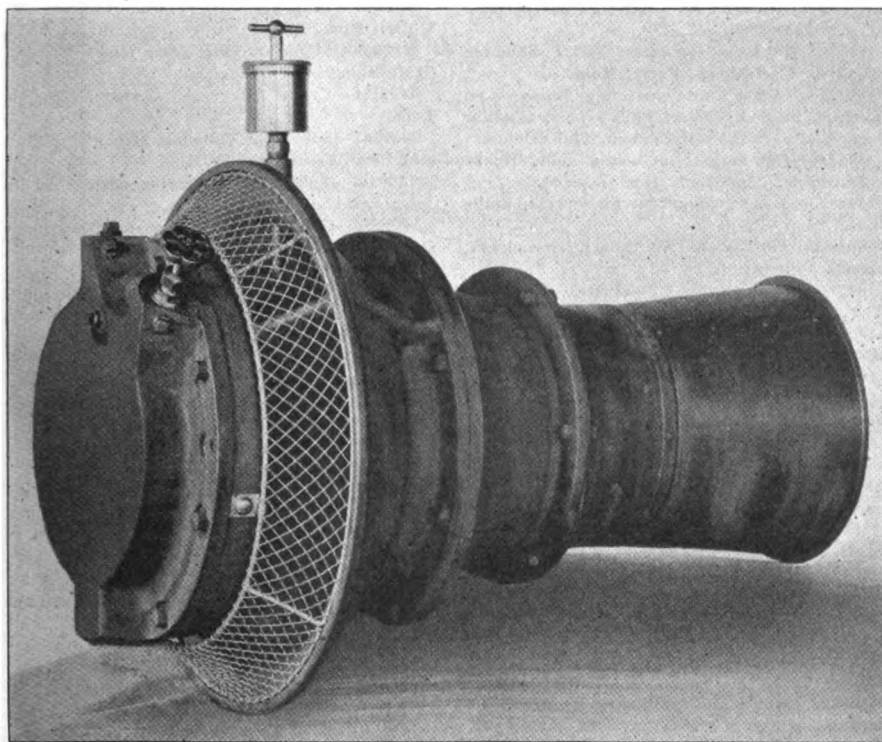
Screw Blade Propeller Blower Developed

Development of a screw blade propeller blower which delivers air parallel to the axis, is announced by the Coppus Engineering & Equipment Co., Worcester, Mass., manufacturer of power plant equipment. The company's blower operates against pressures up to 8-inch water, has an efficiency up to 80 per cent and its power consumption at constant speed is practically unaffected by variation in air delivery or pressure, according to the claims of the company.

These features, it is pointed out, enable the blower to be used for undergrate or forced draft for hand fired boilers, chain grate, overfeed and underfeed stokers; induced draft; main and individual room or tunnel ventilation for mines; air heating or drying installations; cooling of electric motors and generators; and ventilation of factories, boiler rooms, ships, etc.

The principal feature of this blower is the stationary guide vane of special design beyond the propeller. The air current leaving the propeller is readily subdivided owing to the design of the individual vane blades.

The blowers are high speed machines requiring a comparatively small driving unit. They are designed to work with the same efficiency installed in pipe lines or at the entrance or end of the air duct, operating as blowers or exhausters respectively. The blowers can be reversed to change the direction of flow of air. In such a case, they deliver from one-third to one-half of their normal capacity.



STEAM TURBINE DRIVEN BLOWER FOR VENTILATING AND FORCED DRAFT SERVICE

Makes Hook Suitable for Many Uses

A new safety hook for general marine and industrial uses has been placed on the market by Frank W. Trabold, 30 Church street, New York. It comprises a hook, a latch, a locking member and a swivel ring. The latch and hook have a dovetail connection and are locked together by a cam on the locking member which automatically comes into position when the hook is latched. By means of the swivel ring the hook may be hung from a crane or hoist or may be fastened to a chain or rope. In place of the swivel ring, the hook also can be furnished with a straight shank which can be riveted to a tackle block.

The new device is recommended as a sail hook, on the cross arms or other places, and it is claimed its use prevents the fouling of the sails to a large extent. It is recommended for use in connecting steering gear chains at the pilot house and rudder post. It is recommended as a mooring hook for all types of craft and, in addition to preventing the movement of the vessel due to wind, waves and currents, can be used to advantage in preventing the theft of small boats, since it is impossible to unlatch the hook when a chain, secured by a padlock, is placed around the locking member.

The hook can be used to advantage in connecting the anchor to the anchor chain in order to eliminate the necessity for sawing the shackle when the anchor chain must be annealed. When used for connecting the anchor and anchor chain, the hook is provided with a machine key which prevents the hook from unlatching while in service. The new safety hook was designed by Owen J. McGowan, manager of Raymond Releasing Device, Inc., New York.

Late Marine Patents

A copy of any one of these patents can be obtained by forwarding 25 cents in stamps to Siggers & Siggers, patent attorneys, National Union building, Washington, and mentioning MARINE REVIEW.

1398246—Apparatus for supplying air to the exterior or hulls of ships, F. G. Trask, Ross, N. Dak.

1398451—Lifeboat, B. E. Torgersen, Seattle, assignor to the Self Bailing Life Boat Co.

1398461—Steam turbine, Charles V. Kerr, Aurora, Ill., assignor to the American Well Works, Aurora, Ill.

1398467—Flying boat, Luke D. Reed, Burnham, Ill.

1398541—Ship salvaging apparatus, Henry D. Deam, Benton Harbor, Mich., assignor of one-half to Fred J. Petrovics, Chicago.

1398702—Boat lifting and launching mechanism, D. Maggi, Philadelphia.

1399059—Turbine machine, Victor Kaplan, Brunn, Austria.

1399196—Submarine rescue craft, Alfred J. Collins, Amherst, N. S., Can.

1400316—Art of raising submerged vessels, Jesse W. Reno, New York.

1400787—Boat, Carl J. Baer, St. Louis.

1400799—Turbine, William Chilton, Loughborough, England, assignor of one-half to the Brush Electrical Engineering Co., Ltd., Loughborough, Leicestershire, England.

1400911—Pumping arrangement for turbine driven separators, Ludvic Rasch, Christiana, Norway.

1400976—Life saving device, William G. Parmele, Seattle.

1401036—Marine propulsion, Jerre McPhail Bowles, Atlanta, Ga., assignor of one-third to George M. Barday.

1401233—Manually propelled life-saving device and attachment for boats, Edward Bellman, Evansville, Wis.

1401889—Wooden ship, William T. Donnelly, Brooklyn, N. Y.

1401919—Ship's davit, Charles B. Osbon, Somerville, Mass.

1401992—Propeller, William H. Leinwerber,

1405643—Lead adjustment for propeller blades, Eugene Weaver, Bryan, O.

1405684—Ship, Adolph F. Hamacek, Chicago.

1405728—Submarine escape boat, Oscar Tervo, Quincy, Mass., assignor of one-half to Konsta Hill, Quincy, Mass.

1405839—Ship signaling apparatus, Paul S. Grierson, South Orange, N. J., and Samuel N. Mead, Brooklyn, N. Y., assignors to Charles Cory & Son, New York.

1405844—Ship, Myron F. Hill, New York.

1405910—Propeller, John Benjamin Flowers, Albany, N. Y.

1406364—Propeller, Louis T. Frederick, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

1406365—Propeller and method of making the same, Louis T. Frederick, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

1406570—Winch for ship's boat lowering mechanism and other purposes, James Henry Richard Mace, Liverpool, England.

1406602—Boat, Carl J. Baer, St. Louis.

1406659—Ship, Ferdinand Francois Lepartementier, Paris, France.

1407172—System for indicating the speed of boats, Frank B. Sanborn, Cambridge, Mass.

1407375—Ship centering device, Ralph N. Burbank, Somerset, Mass.

1408049—Governing means for marine turbines, Carl R. Waller, Trenton, N. J., assignor to De Laval Steam Turbine Co., Trenton, N. J.

1408129—Oarlock for boats, Alcanzo D. Newcomb, Norfolk, Va., assignor, by mesne assignments, of one-half to Richard D. L. Fletcher, Cape Charles, Va., and one-half to Robert T. Marsh, Richmond, Va.

1408130—Lifeboat, Alcanzo D. Newcomb, Norfolk, Va., assignor, by mesne assignments, of one-half to Richard D. L. Fletcher, Cape Charles, Va., and one-half to Robert T. Marsh, Richmond, Va.

1408178—Boat construction, Virgil Sidney Downing, Jackson, Miss.

1408426—Electrical propulsion of ships, Albert Aichele, Baden, Switzerland, assignor to Aklengesellschaft, Brown, Boveri & Cie, Baden, Switzerland.

1408580—Reversible boat, Thomas H. Gaskin, Woodford, England.

1408765—Propeller for vessels, Charles M. Motte, Paris, France.

1408929—Ship's steering gear, James Richard Clay, Blundellsands, England.

1409166—Craft, Albert A. Graham, Topeka, Kans.

1409341—Submarine signaling, Henry C. Harrison, Port Washington, N. Y.

1409361—Submarine life saving device, Adrian Cote, Franklin, Mass.

1409559—Scaffold for ship construction, Donald McLeod, Tacoma, Wash.

1409788—Measuring the so-called firing delay for naval guns, Ludwig Schon, Essen, Germany, assignor to Fried Krupp, Aktiengesellschaft, Essen-on-the-Ruhr, Germany.

1409914—Tonnage recorder for ships, Sophus Peter Bahnsen, West Hartlepool, England.

1409937—Boat stern for detachable motors, William Ferold, Millis, Mass.

1410048—Boat propelling device, Stanislaw Wisniewski, Hartford, Conn.

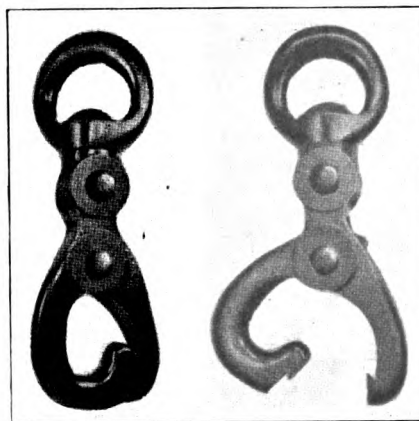
1410287—Oil carrying ship or barge, William A. Edsen, Montclair, N. J., assignor to National Oil Co., New York.

1410438—Life saving float, Ernest Thompson Willows, London, England, and Walter James Austin, Swansea, Wales; said Willows assignor to said Austin.

1411102—Submarine vessel attachment, Anthony Hozlak, Nanticoke, Pa.

1411987—Ship propulsion system, F. H. Clough, Rugby, England, assignor to General Electric Co.

1413585—Marine engine governor, Thomas Jackson, Lewisham, England, assignor to Allan Ramsay, Folkstone, England.



SAFETY MARINE HOOK SHOWING METHOD OF LOCKING

Chicago, assignor, by direct and mesne assignments to Continental Air Craft & Transportation Co., Chicago.

1402099—Flotation apparatus, John T. Shimmin and Clyde E. Bushnell, Butte, Mont.

1402258—Means for protecting ships from collisions, Samuel Shelley, Philadelphia, assignor of one-half to Samuel Moyerman, Philadelphia.

1402530—Construction of ship's hulls, Henry A. Nicholson, Auckland, New Zealand.

1402853—Noncentrifugal inertia turbine, Emile Faure, Paris, France.

1402992—Turbine, K. A. Ahlfors, Helsingfors, Finland.

1403103—Turbine, E. B. Petrie, Brooklyn, N. Y.

1403798—Engaging and disengaging gear for ships' boats, Owen J. McGowan, Brooklyn, N. Y.

1403828—Boat, Carl J. Baer, Riverside, Ill.

1403894—Ship's log, C. M. Christensen, East Orange, N. J.

1404407—Marine railway and the like, L. S. Roßener, San Francisco, and Robert H. Taylor, Oakland, Cal., said Taylor assignor to said Roßener.

1404921—Ship salvaging apparatus, James M. Adams, Chicago.

1404941—Porthole closure, Manuel D. Dominguez, New Orleans, assignor of one-half to Juan Argote, New Orleans.

1405364—Signaling means on submarine boats, Oscar Von. Truppel, Frohnau, near Berlin, Germany.

1405482—Method of and means for propelling craft navigating a fluid medium, Louis G. Bostedo, Chicago.

1405551—Turbine, Samuel William Nichols, Edmonton, Alta., Can.